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Textile World

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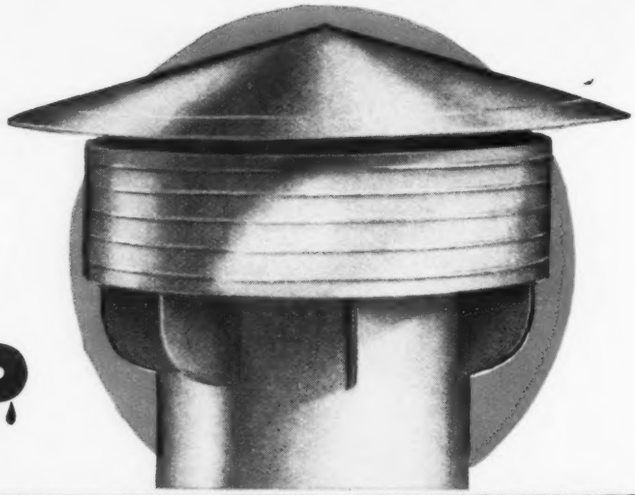

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Textile World

May, 1937

Editor: DOUGLAS G. WOOLF

A "Shall Not"... and a "Must"

HILLMAN, Wagner and Ellenbogen are the current worries of the textile industry. And the greatest of these, at the moment, is Ellenbogen. Greatest in nuisance value, that is.

His bill has reached the hearing stage. Where does it go from there? Our Washington correspondent tries to answer that question on page 71 but actually there is no final answer at this time.

We believe the textile industry can help to shape the answer by (1) intelligent opposition to the Ellenbogen bill, and (2) intelligent support of the proper kind of broad industrial legislation.

OUR own opposition to the Ellenbogen bill is no news to our readers, and consequently it is not necessary to go into too great detail.

The principal objection is that the proposal is for domination of an industry by a commission, and not for self-government by an industry under Government supervision. The entire bill reeks with the odor of that fact. After reading a previous version of it, we commented in these columns: "If that's self-government, we'll take vanilla." That still holds.

Next, it sets up an impossible cost burden for the industry: a 35-hour week and an $18 minimum wage.

But, even if these and its many other faults are corrected when the bill is finally reported out of committee, it would still be a mistake. Singling out an industry for special treatment is bad business. Each industry is in competition, actually, with every other industry in the country. Upsetting the normal competitive relationships among industries as to price, hours of work, etc., to the disadvantage of one industry, will have unfortunate repercussions not only upon that industry but upon industrial communities generally.

SO much for the negative part of this editorial: the "shall not." Now for the positive side: the "must."

Within the next few months, we feel confident, there will be passed some type of national legislation having as its aim, broadly, the major purposes of the NRA. Consequently, we should like to re-emphasize the attitude which we believe the textile industry should take toward this legislation:

1. It should play an active part in shaping the bill, rather than a defensive part in fighting it.

2. It should strive for broad, simple legislation which will enable *all* industries to enforce basic labor standards: specifically a maximum work-week and minimum wages. The 40-hour week should be safeguarded. Wage minima should be similar to NRA code wages, and not bare subsistence levels as suggested in some recent proposals.

3. It should, for the time being at least, refrain from complicating the situation by seeking production controls or fair trade practice rules.

Out of the right kind of industrial legislation, permitting industries to enforce sound labor standards, will come stability for employers and employees. Therefore it should be the hope, not the fear, of textile manufacturers.

The Editor Says

Constitutional—but Still Lousy

THE Supreme Court established the validity of the Wagner Act, but did not thereby make it a good act. In fact, today we regard it as just as lousy an act as we did in February 1936 when we declared on this page that it "just didn't make sense"—and enumerated the points of weakness as demonstrated by its actual operation.

It is just as important today to correct those weaknesses, whether organic or administrative, as it was before the Supreme Court's decision. In fact more so, because now we know that the act is here to stay until repealed or amended.

Belated climbers on the band-wagon are proclaiming loudly their belief in the right of workers to organize. That's academic. The real issue is the method of safeguarding that right, from the standpoint of both employers and employees. The act gives no real assurance to either.

Specifically the kind of protection that is needed is provision, through either amendment of this act or supplementary legislation, against coercion of employees by unions; against illegal practices such as sit-down strikes, flying squadrons, etc.; and against intimidation of both employees and employers by racketeers. The answer, of course, is the placing of some sort of responsibility upon labor unions.

By some, this argument will be dismissed as reactionary: as merely a cry of pain from special interests. Our answer is that organized labor is more on the spot today than is industry. Its power has expanded far more rapidly than has the ability of its leaders. Abuses are developing which threaten to set back the cause of labor, by decades. Real liberals will lead in the demand for such safeguards as we have outlined.

Heed the Caution Light!

AGAIN at the risk of being called a spoil-sport, we should like to call attention to certain caution lights flashing here and there in the cotton textile picture.* Specifically, they are that—at the end of April—sales of staple cotton fabrics were below production and that deliveries, although still heavy, were less than the previous month, and in fact somewhat below output.

True, there are still many encouraging facts about the present situation: the comfortable back-log of orders, low level of mill stocks, high level of retail sales, and relative resistance of manufacturing margins.

But, our anxiety is to see the beneficial effects of those assets preserved, not imperilled. Threatening them are two potential dangers:

One is overproduction. March consumption of cotton in this country broke all records. Consumption during the first quarter of 1937 was 28% over that of 1936 and 25% over that of an assumed "normal" year (1924–31 average). The sobering fact remains that such a rate of mill activity cannot be maintained indefinitely. The sooner manufacturers realize it, and begin to step down their operations, the better for the state of their business, and the status of their employees, next summer and next fall.

The other threat is the ever-present danger of price collapse when sellers become worried about the outlook. Then—if past experience is a criterion—they may proceed to give away all the profits they have made in the last year, and start again to build up a deficit.

All this can be avoided if manufacturers will only realize that the millennium hasn't arrived, and that—although we are in a definitely better era in cotton textiles—fundamental conditions in the industry still call for balance and judgment in the formulation of production and price policies.

Heed the caution light before you get pinched for going through a red one!

* Much of the ensuing comment can be applied to the wool textile industry also.

Textile Education: New Style

WE wonder how many textile manufacturers, when they think of their textile schools, still visualize them as institutions for the production of operating men only: overseers, superintendents, etc.

Important as that job is—and always will be—the textile schools today are preparing—and are in part prepared—for the production of textile executives: men who will run the industry a decade or more hence.

That is the main thought we took away from the semi-annual conference of textile school deans held last month under the auspices of the Textile Foundation.

It is impossible to over-rate the potential significance of this movement sponsored by the Foundation.

Speaking personally, when we first came into this industry from college we investigated the status of textile education—and we have been examining it ever since. We found excellent institutions headed by such men are E. W. France, Chas. H. Eames, Thomas H. Nelson, and others. Each, however, was a separate entity: serving well the district and purpose for which it was created, but not particularly concerned with the advancement of textile education in the abstract.

Today we find those same institutions and those same men engaged in a common project. That is what the Textile Foundation's movement has accomplished.

Whose move is it next? The textile manufacturers', of course. They will find it to their self-interest to orient themselves to the new status of textile education.

Speaking again personally, we once formulated mentally an ideal program for our son if he should want to go into the textile industry. We visualized a combination of a textile school training and a business course at some college such as Harvard or Wharton. Today, we believe, the textile schools are organizing themselves through the Foundation movement to give just such a combination course. It will then remain merely a question of how much academic collegiate training a man will desire to give his son as plus value.

Not so long ago, there was little to offer the undergraduate in a textile school. The hope of a real future in this industry seemed rather dim. Today, it is increasingly evident that the young man who cares to prepare for this industry finds ahead of him a lucrative profession as a textile technician or executive.

That, to us, is one of the most hopeful signs of the up-turn. And, in preparation for that opportunity, the Textile Foundation has performed a vital service.

In the Month's Textile News

Ringless Patent Held Invalid

That Charles A. Kaufman, of Julius Kayser & Co., did not "invent" the three-carrier method of producing ringless stockings and that his patent is invalid for want of novelty in both the method and product were the conclusions reached by Judge Oliver B. Dickinson in deciding on April 9 the famous ringless suit tried in the U. S. District Court of Philadelphia early this year.

Although Mr. Kaufman's patent was so worded as to apply specifically to silk full-fashioned hosiery, the court saw "no difference between a covering for the torso or something to be worn on the neck and stockings to cover the legs." It found that the three-carrier idea was previously "in use by the weaving art and by the knitting art in the knitting of other fabrics intended for human wear."

The court also considered that "the unusually large number of claimed inventors of the idea . . . might support the inference that the call made was not for invention but for the application of ordinary skill." "The truth," it continued, "is possibly closely akin to this, but it may be expressed under the figure that each of these applicants for a patent was in need of water and each went to the common well of the prior art to get it. No one of them supplied the inventive idea, but each took it from the same source."

Therefore, the charge of Julius Kayser & Co. and Textile Patents Corp. that Rosedale Knitting Co. infringed U. S. Patent No. 1,969,307 was dismissed; but the payment of the 5c per dozen royalty continues—for the time being. The decision is to be appealed by the plaintiffs.

Meanwhile, the trial in Ottawa, Canada, of the suit by Belding-Corticelli Ltd., of Montreal, and six other Canadian hosiery companies to have the Kaufman patent declared invalid, concluded April 27 before Justice MacLean in Exchequer Court. The Canadian trade does not look for an early ruling.

Present Report on Distribution Study

Representatives of textile trade associations met April 22 at a luncheon arranged by the Committee on Economic Research of the U. S. Institute for Textile Research to hear a report of progress on the study of production and distribution organization in the textile industries, now being conducted by the University of Pennsylvania under the auspices of the Textile Foundation. The report was made by members of the staff of the Industrial Research Department, headed by Dean Joseph H. Willits, which is carrying on the study in cooperation with textile trade associations and the Committee on Economic Research.

Dean Willits said that over 300 interviews had already been made with executives in textile and related industries and that over 500 interviews would be made before the completion of the study. Attention was called to the new concept of vertical organization being developed in the study. This is to the effect that greater vertical organization is really a matter of securing control over the flow of merchandise, and that such control may be had directly through ownership of merchandise or indirectly through branding or licensing.

Those present at the luncheon included:

Arthur Besse, president, National Association of Wool Manufacturers; W. Ray Bell, president, Association of Cotton Textile Merchants of New York; Dr. Claudius T. Murchison, president, Cotton-Textile Institute; Charles Whitney Dall, president, National Rayon Weavers Association; W. P. Fickett, president, Textile Fabrics Association; Harold R. Lhowe, executive director, National Knitted Outerwear Association; H. I. Kleinhaus and Thomas Robb, National Retail Dry Goods Association; Frank Cheney, director, and E. T. Pickard, secretary, of the Textile Foundation; Dr. Wilford L. White, Department of Commerce; Drs. Joseph H. Willets, C. Canby Balderston, George W. Taylor and Hiram S. Davis, of Wharton School, University of Pennsylvania; F. S. Blanchard, chairman, Paul W. Cherington, Stanley B. Hunt, W. Homer Turner, Douglas G. Woolf and A. W. Zelomek, members of the Committee on Economic Research of the U. S. Institute for Textile Research.

National Cotton Week, May 31 to June 5, is expected by advertising experts to break all previous records in the history of the event for total newspaper lineage and window displays featuring cottons. Between 35,000 and 40,000 retail stores in every section of the United States are expected to participate. More than 165,000 official posters have been distributed in advance. Other mailing pieces include an idea book entitled "Here's How" designed to aid the merchant in promoting cottons.

This and That

◆ The annual convention of the American Cotton Manufacturers Association will be in session in Washington about the time this issue is being distributed. Details of the proceedings will be published in next month's issue.

◆ Relations between the textile manufacturing industries and the consumer, particularly with regard to fiber identification, were analyzed April 30 at an all-day conference of mill, garment trade and store representatives, held at the Hotel New Yorker, New York, by the Textiles Education Bureau, a division of Byron G. Moon Co. Those participating included John C. Turrell, director of Sanforizing Division, Cluett, Peabody & Co., Herbert Gutterson, president, Institute of Carpet Manufacturers of America, and W. E. McKay, of W. E. McKay & Co., converters. Byron G. Moon, presided.

◆ The Lawrence (Mass.) City Council recently adopted resolutions placing its members on record in favor of Federal action to curtail or prohibit Japanese textile imports. . . . Representative Hamilton Fish has introduced a bill (H.R. 5761) which would limit importations of rayon, cotton and wool textiles from Japan to levels not exceeding importations made during 1933. To mix nationalities a bit, it is thought in Washington that, irrespective of its merits, the bill hasn't a Chinaman's chance of passing.

Blank & Stoller

THE AMERICAN SECTION of the joint Japanese-American Cotton-Textile Industries Committee in session—left to right: Hatsujiro Yoshida, manager of New York branch Mitsui & Co.; Dr. C. T. Murchison, president Cotton-Textile Institute; G. Edward Buxton, York Mills, New York; F. S. Blanchard, Pacific Mills, New York; Toyoji Inouye, commercial secretary of the Japanese Embassy. The Japanese section of this committee consists of Saburo Nango, Japan Cotton Trading Co., Osaka, Japan; Otokichi Shoji, Japan Cotton Spinners Association, Osaka; L. W. Chamberlain, manager Osaka branch, National City Bank of New York; Paul Steinorf, U. S. Trade Commissioner at Tokyo.

World Conference . . .

No 40-hour week recommendation, but none was expected—Intangibles are the real results

By Blaine Stubblefield

Washington Office, TEXTILE WORLD

***THIS IS an attempt to distil into two pages the essence of two weeks of conversation. The task is not an easy one. Our Washington representative, who tackled it, attended the sessions of the World Textile Conference, April 2-17; interviewed many delegates; and analyzed the voluminous reports. When he submitted his manuscript he wrote: "I had a hard time narrowing this subject to fundamentals. It seems to be enmeshed with all the world and all its affairs." Which remark, world-weary though it may sound, probably characterizes accurately the scope of such a conference as this.*—Editor.**

NO sooner had flowery welcome speeches ended than the International Textile Conference settled on the 40-hour week as the main approach to its objective: a better life and living for workers and employers. When the conference finally failed to agree on this issue and passed it along to future meetings, no one was surprised. But all were surprised and pleased as they watched the conference pry open doors which for ages had been closed against international understanding. If the world can hold the civilized ground it has gained, said able observers, this conference will surely bring good to the textile industry.

For the first time in history, labor, management, and government came together to plan the welfare of a world-wide industry. Tripartite representation from 27 countries, invited by the International Labor Organization, joined in Washington, April 2.

It was blossom time along the Potomac but the 200 delegates stayed in the Government's high-vaulted auditorium, said everything twice (in English and French), and turned out a huge two weeks' work in the form of three reports. The three reports summarize the group's opinions on (1) economic problems, (2) social problems, and (3) a complete program of initial and continued statistical research. The three reports were unanimously adopted. They will form the basis of action by the textile section of the ILO at its next annual meeting at Geneva, in June.

Closing the conference, John Winant, its president, said: "The abstract value of the meeting is incalculable, unless some world deluge of passion washes it away." Mr. Winant was formerly chairman of the Social Security Board. Secretary of Labor Frances Perkins said: "Some of us dare to hope that these problems can be resolved in future meetings of the ILO." "It will cause textile people all over the world to think for themselves, to their great advantage," was the remark of Dr. Claudius T. Murchison. "Workers and employers both, now for the first time, will appreciate the problems of their competitors in other countries," was the result forecast by Dr. Isador Lubin, Commissioner of U. S. Labor Statistics. William Green, president of the American Federation of Labor, said the meeting had "made history."

To sum up the Conference's three reports, one must decide which should come first. They are equally important, except, as someone said, there is no use talking social improvements that can't come within the scope of economics. So economics comes first. The report can be outlined briefly in seven points:

1. In framing their commercial policies governments should take account of conditions in countries with which they trade, and should consider the standards set by international labor conventions.

2. Government should make every effort to reduce unreasonable trade barriers so as to enlarge trade and increase volume of manufactures with resulting lower prices all around.

3. An International Tripartite Committee might be set up within ILO to study ways and means to achieve prosperity and justice for all in the textile industry.

4. Efforts should be continued to coordinate the interests of producer and consumer and particularly to improve suitability and accessibility of raw materials looking toward better efficiency and lower cost.

5. Governments might consider setting up an International Commission to study production and prices in the world textile industry, seeking better world balance.

6. Minimum wage fixing and trade practice authorities should be set up in countries that do not now have them.

7. Efforts should be made to raise the purchasing power of consumers in agricultural countries.

Social Aspects

The report on social aspects of the industry was set up in ten main points. Here they are:

1. Voluntary cooperation between management and workers is the quickest and most effective way to remedy bad conditions of employment.

2. But collective agreement is not always a guarantee of conditions advantageous to the country involved. The government should enact laws, and all textile countries should ratify conventions, providing for good working conditions and fair competition.

3. Night shifts should be resorted to only when strictly necessary. Where two 48-hour day shifts are worked, reduction of length of shift should be considered. Special regulations should be set up for young workers. It was emphasized that responsible employers concurred in this opinion.

4. Night work by women and young persons should be absolutely prohibited. Countries which have not ratified conventions on this subject should consider doing so.

5. Conventions requiring weekly rest days and holidays merit serious consideration for ratification by all governments.

6. Where production efficiency is stepped up by time and motion coordination, management and employees should jointly consider the new conditions and human limitations of the workers.

7. Studies of problems of fatigue, health, accident, as affected by lighting, posture, temperature, ventilation, lifting of weights, dust, etc., should be made by ILO and reported to all parties concerned.

8. Attention of all governments is invited to the Minimum Age Convention of 1919, and to any revised conventions, with a view to ratification.

9. ILO should renew its efforts to bring about regulation of labor conditions in China's International Settlements, without which China can make no regulatory progress.

10. *A majority of employers, and several governments, urged that reduction of hours was impracticable, and left to the ILO conference at Geneva*

Wide World Photo

SNAPPED AT THE CONFERENCE—(Left to right) Secretary of Labor Frances Perkins; J. Necas, delegate from Czechoslovakia, chairman of the opening meeting; John G. Winant, United States delegate, elected chairman for the two-weeks' session; Secretary of Commerce Daniel Roper

in June the responsibility for a "draft convention" on that subject.

Equally important is the Statistical Committee's report, but it takes less words in the telling. It recommends (1) a survey of wages and hours prevailing in all the textile countries; (2) that ILO conduct a continuous study and that it report regularly, possibly quarterly; and (3) make a study of the actual cost of textile products, never as yet undertaken.

World Competitive Problem

To form simple, clear conclusions from the maze of facts and human needs involved in the world's textile work seems "beyond the wit of man," as a gentleman from Scotland put it.

One fact, clear beyond doubt, is that low production costs in some countries give them a killing advantage over others in export trade—and all industrialized countries export more or less textile goods.

When the low-cost countries are asked to raise their workers' standards of living to adjust this inequality, they reply that their standards are as satisfactory to workers as in other countries. Japan, the strong competitor in the low-cost group, contends that free, clean housing, good meals, educational and entertainment benefits, and other compensation to workers, add up to first-rate pay.

Another group, such countries as England, Japan, Holland, depend largely upon a textile industry for which they must import raw materials, which adds to the cost. These people feel they cannot set hours and wages to match countries which grow their own fibers, such as the United States.

Inequality of production costs, and inequality of material costs—those are two of the hard problems. Then the third, and most difficult, is that textile sales have not increased as they should, because the world's multitudes do not have the money to buy. Peoples unable to buy, generally speaking, are concentrated in the agricultural countries. And some of those agricultural countries—Japan, for example, which is 50% agrarian—produce great quantities of textiles which they must sell to other countries. And the suggested answer to that problem is that those agricultural populations should be paid more for their sugar, wheat, cocoa, tea, coffee, textile fibers, rubber, etc., so they can buy more textile goods. But no one knew how to raise prices for those materials. Nor did anyone mention the world problems that would arise if those prices were forced up, nor mention the new conferences that would be called to settle them.

One day a British delegate suggested, with a straight face, that Americans turn off their steam heat and wear more clothes. Japan, another land of cold houses, seconded the motion. Most of the compensatory moves offered to cure textiles' ills were not funny. It would take all the space in this magazine to set them down. Summed up, they amounted simply to taking the load off one man's back and putting it on another.

And paradoxically, that is the answer, though today it seems hopeless, men and nations being what they are. If the world industry is to be stabilized, some countries, some employers, some workers will have to make sacrifices, not philanthropically, but selfishly, on the good prospect of future rewards.

ILO wants shorter hours—and other benefits. International labor is not now in a position to demand them. It will try, at Geneva, to convince employers that better conditions, better pay, for 15,000,000 people, will create a better textile goods demand.

The International Labor Organization may become more important in world industry. It was organized in 1919; Samuel Gompers helped to write its constitution. In 1934 the United States, by act of Congress, became one of its 62 members. "Through the democratic process of voluntary cooperation, ILO proposes the orderly redistribution of the fruits of mass production in the interest of social justice and world peace." Each member country sends a delegation of one for employers, one for labor, and two for government, to meetings at least once a year. Special meetings, of which the textile conference was one, are held.

John Winant, by his firm, thoughtful, and kindly management of the conference, won the friendship and good wishes of all, for himself and for the United States. He said to a representative of TEXTILE WORLD, after the close, that no better industry than textiles could have been chosen for this great experiment. He repeated his opinion that its intangible good results will be immeasurable. And whatever may happen at Geneva, he said, the success of this meeting will encourage other industries to similar efforts.

TWOC

Signs up some mills but faces internal strife

A SERIES of agreements with scattered companies marked the progress of the Textile Workers Organizing Committee last month. The biggest C.I.O. catch was the Viscose Co., employing 20,000 workers. The agreement there included a 10% wage increase, $15 minimum wage, 40-hour week, and recognition of TWOC as the collective bargaining agency of the employees of the company. In fact the rayon industry seemed to be one of the focal points of the C.I.O. attack.

The other agreements covered a miscellany of plants in New England and the Middle Atlantic States, touching practically all branches of the textile industry. Terms concluded were similar in most cases. The second largest catch was J. & P. Coats Co., Pawtucket, R. I., employing 4,000. On May 6, TWOC announced that the number of textile workers covered by union contracts since the drive began totalled 70,000 at that time.

Meanwhile, clouds were gathering in the South which seemed to foreshadow, on the surface at least, a finish fight between the two major groups in the labor field. Central labor bodies in that section were ordered by A.F. of L. to abjure the C.I.O. A center in the controversy was A. Steve Nance, president of the Georgia Federation of Labor, and head of the C.I.O. drive in the Deep South region. The A.F. of L. ordered him relieved of his duties in the former capacity, on the premise that they were not compatible with those of his C.I.O. connection. Although some observers were skeptical as to the sincerity of this fight between the two groups, the best opinion was to the effect that the gulf between them had become too great to be bridged, and that this intra-labor struggle would have to be settled before the C.I.O. drive could be expected to proceed in its full vigor.

Another specific development reflecting the split was the resignation of John W. Nates as president of the South Carolina Federation of Labor on the grounds that the inevitable bitterness which would be aroused by the C.I.O.-A.F. of L. battle would hamper the performance of his duties as chief labor commissioner of that State.

Thumbs Down on Sit Down

Meanwhile, two other governors in the South—Gov. Hooey of North Carolina and Gov. Perry of Virginia—declared their conviction that the sit-down strike is illegal, and their intention to enforce the law in respect to it.

In Washington, Sidney Hillman, chairman of TWOC, told President Roosevelt that he hoped no widespread strike would develop in the textile industry, while John L. Lewis, head of C.I.O., announced his opposition to the proposal for the incorporation of trade unions. He declined to state whether the C.I.O. would "abandon the sit-down strike at this time."

The attitude of the textile industry toward the C.I.O. drive is being constantly strengthened by an increasing confidence in the soundness of its own defenses. The succession of wage increases, the reduction of most of the relatively few 50-hour plants to a 40-hour basis, and the fact that textile labor standards are on a higher level today than ever before in the history of the industry is regarded by many as the best answer to a unionization attempt. On the other hand, many observers warned against taking Hillman too lightly. The war is not over, they say; in fact, it hasn't really begun. And those who know Hillman's background agree.

Incidentally, two phases of that background are frequently cited today as bases for concern over results of Hillman's activity in the textile field. One is the excessively high costs which have been built up in the clothing field during his years as labor leader in that industry, and the other is the fact that he does not seem to have been able to prevent the growth of racketeering in sections of that field. The latter worry has been encountered by this writer in many sources recently; the view generally expressed is that, no matter how constructive a man's own purposes may be, failure to control destructive tactics lower down in the organization nullifies his own aims.

Maintain Morale!

A practical formula for meeting the projected drive of the C.I.O. was suggested by Robert R. West, president of Riverside & Dan River Cotton Mills, in an address before the Northern North Carolina-Division of the Southern Textile Association last month. He told the operating executives there that they could best serve their companies during this "upset period" by keeping labor relations on as even a keel as possible, and by maintaining morale in their particular departments. It will require the cooperation of "all the brains and patience in the industry to keep operation of the plants from being disrupted."

Mr. West does not believe that indiscriminate firing—regardless of the present legal aspect—of workers who join the union will help matters in the least. Patience, restraint, legality and unwavering honesty of employers will do far more toward keeping the industry from becoming disrupted than any arbitrary or hard-boiled policy, he asserted. This is borne out in his closing remarks:

"Nobody can lead our people as we can lead them—if we lead well. I beg each of you to get your people in a frame of mind to follow instead of being driven."

Says Who?

SIDNEY HILLMAN was quoted late last month as follows: "I never before have observed such a change in psychology as that on the part of leading industrialists everywhere during the last three months, and it is apparent that industry believes that C.I.O. can make a real contribution to the stability of business."

Well, we don't know whom Mr. Hillman has been talking to, but we can assure him, so far as the textile industry is concerned, that just isn't so. There are three groups of textile manufacturers: those who fear and hate unionism of any kind whatever; those who try to keep an open mind and judge unions on the basis of their works; and those who are definitely pro-union. The first group stays the same, only more so. The third group, of course, does not represent the class Mr. Hillman was referring to. The middle group, while admitting that Hillman is regarded as a more constructive and responsible labor-leader than Gorman, withholds judgment on both C.I.O. and TWOC for two reasons: (1) they don't view the sit-down strike tactics of C.I.O. as a "stabilizing" influence; (2) they regard the inability of Hillman to check racketeering in his own union as something less than reassuring.

We wonder if Mr. Hillman wasn't just beating the tom-tom.

—EDITOR.

Burden of Proof

On Hillman, says Arthur Besse

THE textile industry has an open mind on the question of union organization but the burden of proof is upon those outside interests, who now seek to organize the industry, to show that they are a constructive and not a destructive enterprise, declared Arthur Besse, president of the National Association of Wool Manufacturers, at the annual meeting of the Lawrence (Mass.) Chamber of Commerce April 12.

"We are now confronted with another labor organization in the textile industry—the Textile Workers Organizing Committee, known in the alphabetical list as TWOC," he said. "One should not make the mistake of prejudging anything but it is pertinent to say that the burden of proof is upon Mr. Hillman, the head of TWOC, to prove that this new organization is fundamentally any different from Mr. Gorman's United Textile Workers union which, in a measure, it succeeds, or from Mr. Lewis' C.I.O. of which it is a part.

"I do not want to be understood as being opposed to labor unions as such. On the contrary I believe we should all actively support any labor movement that appeared honestly to strive for the aims which the labor organizers advertise as their objectives. Too seldom, however, are these objectives sought, and too often the struggle for power and tribute becomes of far more importance to the labor leader than the welfare of the individual worker."

Pointing out that the group which directed the textile strike in 1934 has to a large extent been retained in the new set-up, Mr. Besse said that the failure of the textile industry to welcome this new group arises not alone from that fact but because it is part of the C.I.O. "which has proved to be such a lawless and destructive influence in the automobile industry."

"Union organizers today speak fair words but their actions give little guarantee for the future either to the worker himself or to the progressive manufacturer anxious to be among the first to accept and to adopt suggestions for improved labor conditions," he went on. "Nothing to my mind would do more to convince manufacturers in particular and the public in general of the integrity of the labor movement than a real recognition of the fact that business organizations paying high wages and maintaining satisfactory conditions of employment should secure some degree of freedom from strikes and labor disturbances. If the strike as a weapon were used only for adequate cause there would not be the present growing reaction against its use.

"I believe thoroughly in the avowed objectives of the labor union movement. I disbelieve thoroughly in the means now being utilized to achieve those ends. I believe the present leaders of the American labor unions have done the cause of labor irreparable harm in not coming out against the gangster tactics to which so many of the union organizers have had recourse. The end does not justify *any* means."

"Those outsiders who now seek to come into the labor councils of this industry—where today the employees receive better pay and steadier work under better conditions than have ever before prevailed—should be made to show their integrity of purpose and to prove that their real interest is in the welfare of those employees they now seek to represent," concluded Mr. Besse.

Ellenbogen Bill Gets "Go"—But Where?

(From TEXTILE WORLD'S Washington Office)

MR. ELLENBOGEN'S bill has been given the go-ahead signal from the President. The only question at issue is what the go-ahead signal means.

No less a person than Chairman Connery, of the House Labor Committee, is authority for news of the President's interest. This is significant, because Connery has been opposed to the measure and consequently is not given to wishful thinking on it, as are Representative Keller, chairman of the subcommittee which considers the bill, and Representative Ellenbogen, the author. Also, evidence that the President is taking more than casual interest in the bill is found in these two statements: (1) Connery said that the President stated, just before he left on his fishing trip, that the coal and textile industries need wage and hour regulation separate and apart from blanket coverage of general industry; and (2) Connery also said the President made specific suggestions as to the set-up of the National Textile Commission proposed in the Ellenbogen Bill.

On the other hand, there is a strong belief in many quarters that the go-ahead signal given by the President meant only for Connery to go ahead with the hearings—and that hearings mean nothing insofar as eventual fate of a bill is concerned. They say also that if Mr. Roosevelt had given his approval of the bill there would be no hearings, since the bill was fully "heard" last year; it would, they believe, be reported out most unceremoniously.

These skeptics further contend that the sponsors show too much confidence, make too much noise. Connery took the trouble to see the President four times, Ellenbogen saw him twice, Keller saw him once. If they had the right of way, this view holds, they wouldn't holler so much for it.

The above is opinion. The one known fact is that hearings were starting May 10 and most branches of the textile industry were expected to appear in opposition to the proposed measure.

The suggestion made by the President to Connery was to the effect that the commission consist of three members instead of seven or five. One from New England, one from the South, and one from the Deep South would be a good plan, he said; or an alternative would be to have one representative for employers, one for labor, and for the public. No reason was given but presumably five or seven commissioners would use up more conversation, and salary—and three could regulate just as well.

Even if the President has given actual endorsement to the bill, it is realized that he can change his mind on it. He is thinking about bigger things than the textile industry. He wants Federal legislation to provide a standard work-week, minimum pay, and elimination of child labor. Everybody from Major Berry to the Department of Justice, and points East and West, has a plan to that or a similar end. It is believed that the President will not pick one of them until the Supreme Court fight is settled, and then he may pick his own plan. If textile control doesn't look right standing alone, it might be put under the blanket.

A peek at the

Warp Piqué

featured in summer trouserings and dress goods

By Thomas Nelson

North Carolina State College, Raleigh, N. C.

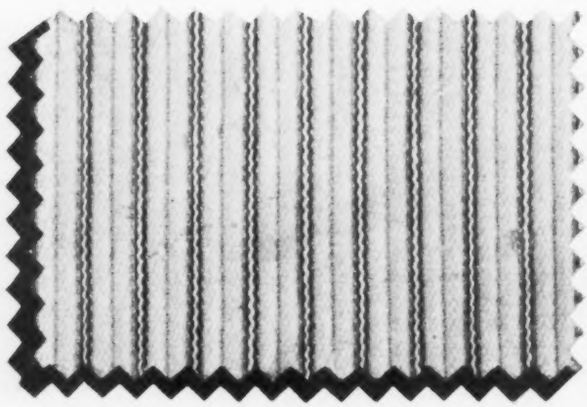


Fig. 1

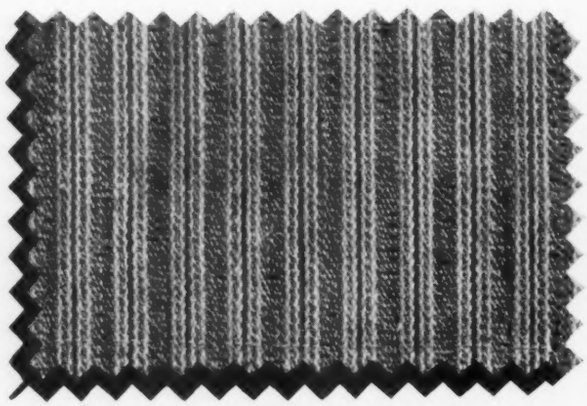


Fig. 6

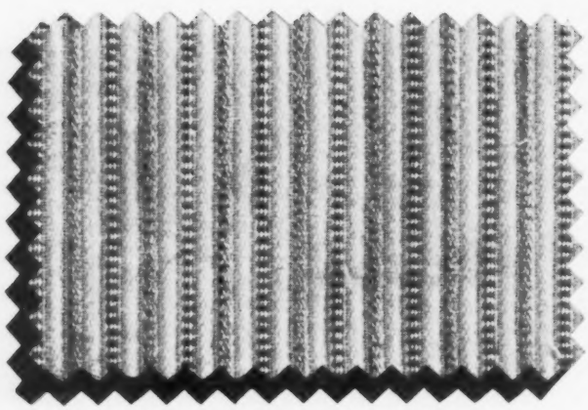


Fig. 4

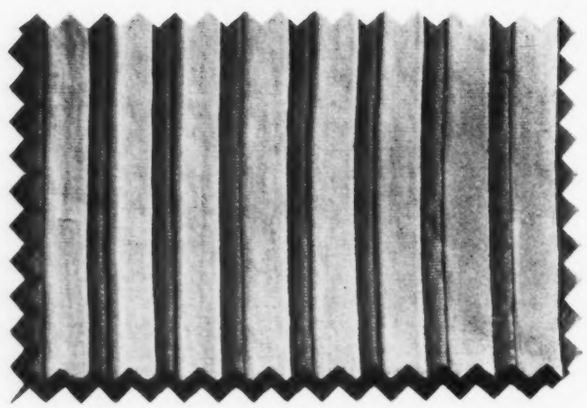


Fig. 7

ONE of the widely used weaves at the present time, for both medium- and light-weight fabrics, is the warp piqué, which is distinguished by having ribs or wales running lengthwise of the fabric. The weave is used extensively in men's summer trouserings and no doubt will feature many of the styles for the coming summer. By a judicious mixture of colored two-ply yarns, a strong, good-wearing fabric is produced which has proved to be satisfactory.

A trousering in which stripes of dark green have been introduced, making an attractive fabric, is shown in Fig. 1. The full pattern in this fabric is arranged as follows: two wales of white threads of eight ends each; one wale of one end white, two ends green, two ends white, two ends green, one end white. All the warp yarns are about 20/2 and the filling yarns are about 26/1.

The usual warp-piqué weave has the picks alternating; that is, the filling weaves plain in one wale and then floats under the next wale. The fabric shown in Fig. 1, however, has two picks floating under all the wales, then two picks weaving plain in all the wales. The design, drawing-in draft, and reed plan for this fabric are given in Fig. 2; and the chain plan is shown in Fig. 3.

As is customary in making these fabrics, the two ends separating the wales weave plain all the way through the fabric and are drawn through the first two harness shafts. Six harness shafts have been used for the wales to prevent crowding or cramming of the heddles on the harness, which would cause the threads to cling together and make floats in the fabric. The warp is woven comparatively tight to prevent the ends in the wale from weaving slack, which will cause kinky filling. This is due to the difference in the weave and take-up of the ends on each side of the wale. The wales should always be separated by a reed wire to make a clear cut between them.

Another well-constructed fabric with an attractive arrangement of colored yarns is illustrated in Fig. 4. All warp ends are two-ply, and the filling is single. The arrangement of ends in this fabric is as follows: one wale of

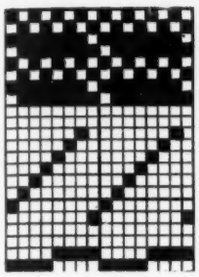


Fig. 2

Wales in sample	2	2	1	2	1	1	1	2	2	1	2	1
White	16 1 1 8 1 5 1 1 8 1 1 1	4 1 1 1 8 1 1 5 1										
Blue	8 4 8 8 2 2 8 8 4											

TABLE I

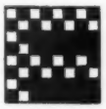


Fig. 3

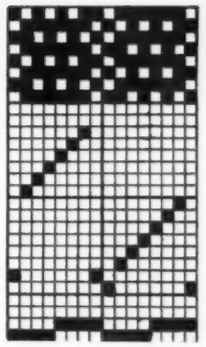


Fig. 5

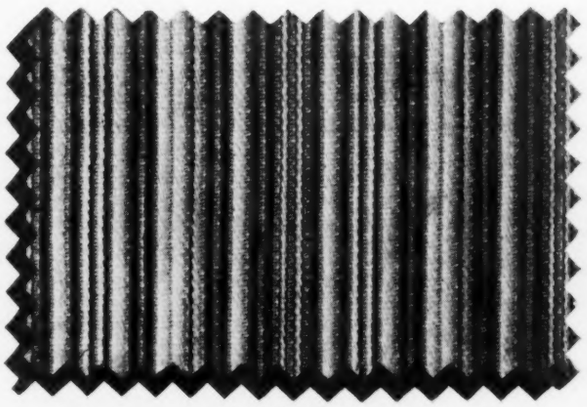


Fig. 8

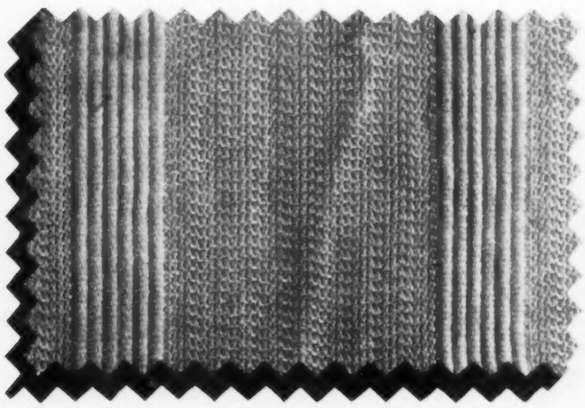


Fig. 10

Fig. 9

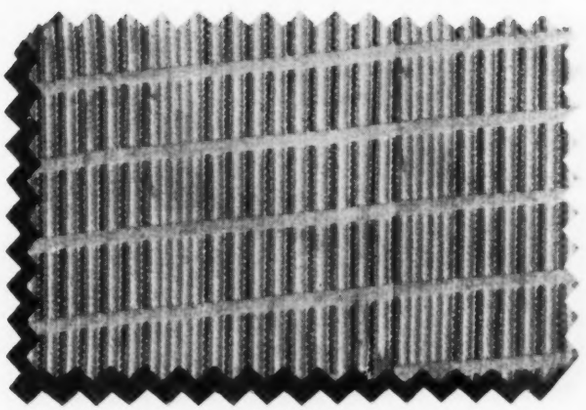


Fig. 11

eight ends white; one wale of eight ends consisting of one end white, one end light brown, one end dark brown and white, one end light brown, one end brown, one end dark brown and white, one end white; one wale of eight ends white; one wale of eight ends consisting of one end white and one end dark brown repeated three times, two ends white.

A fabric in the same line, but with solid blue and blue-and-white-twist yarns substituted for brown, can also be made. The design, drawing-in draft, and reed plan are given in Fig. 5, which shows that the picks weave alternately with the wales. Another fabric of the same kind, in which blue predominates, is illustrated in Fig. 6.

The lighter weights of these fabrics are used extensively for dress goods, pajamas, etc. Fig. 7 is a colored fabric for beach pajamas. The stripes are alternately red and white and the regular two-pick warp-piqué weave has been used. A pajama fabric is illustrated in Fig. 8, with blue predominating. The colors in the fabric are arranged as shown in Table I above.

Another warp-piqué dress-goods fabric is shown in Fig. 9. This is a narrow-wale fabric having 27 wales of six ends each to the inch. The fabric is woven in the gray and then printed. Warp-piqué stripes are also often woven in combination with other weaves, and some very attractive fabrics can be produced by this method. Fig. 10 illustrates a dress-goods fabric consisting of a stripe of six wales of warp piqué, each wale having twelve ends and three wadding ends in combination with a wide, granite-weave stripe. Rayon filling further enhances the bright appearance of the fabric.

Another example of the use of the warp-piqué weave is given in Fig. 11. This is a vesting fabric and is ornamented with two colored ends of black in alternate wales and then checked or barred across the fabric, which gives a distinctive effect.

The various examples given can be used by a designer to make a large variety of fabrics with modifications and changes in color, stripes, and arrangement of weaves.

Germany Goes Synthetic

Challenge to natural fibers will be important in diplomacy, say Leipzig Fair observers

By Paul Wooton

Washington Correspondent, McGraw-Hill Publications

EXHIBITS at the Leipzig trade fair of artificial fibers and of materials in which they are used, provides further evidence of the progress Germany is making in that field. Elongation and distortion have been largely overcome. Greater elasticity has been attained. Strength of fabrics has been increased.

This writer saw the exhibit at Leipzig in which the waterproof properties of zellwolle (staple fiber) were set forth. Public demonstrations indicated that the improved fiber is highly water-resistant and may be boiled without apparent damage to the finished product. In this exhibit were great piles of bolts of men's suitings. The feel and appearance of the material seemed comparable to the best woolens. In his contacts with individual Germans, the writer had opportunity to see in actual use clothing made from fabrics with varying percentages of synthetic fibers. Certainly no exception could be taken to appearance. Wearers testified that such suits are proving as satisfactory as did all-wool clothing previously worn.

New Fibers Are Versatile

With due allowance for the desire to impress a foreigner favorably with a German product, there can be no doubt that a substitute for wool and cotton has been developed that is destined to supplant substantial amounts of natural fibers.

The manner in which the new cloth takes dye adds to its attractiveness. It has merit on its own account. No one having an opportunity to see and to handle the goods displayed at Leipzig will be greatly surprised if a demand for this material springs up in countries where the need for substitution is not so impelling as in Germany with its acute exchange problem and consequent shortage of certain raw materials.

Prominently displayed in the booth of the I. G. Farbenindustrie in the Textile Building at Leipzig were these figures for zellwolle production:

1933- 4,000 tons	1936-22,000 tons
1934- 6,000 tons	1937-34,000 tons
1935-13,000 tons	(estimated)

With the development of a corkscrew kink in the fiber, its insulating property is said to be satisfactorily high and its semblance to natural wool greatly increased.

Incidentally, the textile exhibits at the Leipzig fair fill the large "Textilmesshaus." Thousands of products from the flimsiest lace and the new sheer rayon stockings to the heaviest tarpaulins are effectively displayed and demonstrated.

While the synthetic spinning fibers probably constitute a greater menace of competition to wool producers than to cotton growers, Americans familiar with the development point out that restrictions on cotton production which enhance the price, stimulate these promising efforts to find a substitute. In that connection it is pointed out that were a fiber developed that would take the place of a substantial portion of the cotton crop, it would disrupt the economy of thirteen States.

Necessity is the mother of invention —this time-worn adage is having striking application in Germany today. Under the spur of desperate need the genius and the resource of the German people are being urged to accomplishments that hardly would be attained under more comfortable conditions.

With crude rubber prices at high levels, plus the dearth of foreign exchange in Germany, new impetus has been given research which already has developed a promising rubber substitute. Development of artificial rubber to the point where it can compete with the natural product would have far-reaching effects upon the rubber-growing regions.

Motor fuels are being produced from German materials in such volume that the large domestic requirements of a highly mechanized country will be met entirely within two years, it is predicted.

Plastic materials are being developed in such a manner and on such a scale as makes revolutionary changes in the use of materials seem inevitable.

Such changes are in the direction of progress, but normally they are spread over many years and would thus be sufficiently gradual to permit the businesses involved and their employees to make necessary adjustments without the shock of a too-rapid change.

With cotton at its present price and with the various difficulties of trading, Germany is being spurred to intensive efforts to produce other fibers. Staple fiber production has been increased tenfold since 1927. Rayon output is going up by leaps and bounds. Flax is being grown so successfully and in such increasing volume that there is talk of exports. Hemp is being grown in greatly increased quantities. Sheep now exceed 10,000,000 in numbers. Large use is being made of wool waste. German financial and technical aid is being used effectively to encourage cotton production in southeastern Europe and nearby Asia.

As the cotton grower wants to keep one of his best customers, it seems obvious that his interest would be served best by selling at as low a price as would yield a reasonable profit to the efficient producer. Cheap cotton would be the greatest single obstacle that could be placed in the path of the artificial fiber industry. In the long run it would pay the South, in the opinion of American cotton men in Europe, to bend its efforts toward the production of 8c cotton.

Pinched on Raw Materials

At present, exchange of goods with Germany is practically on a barter basis. This is cumbersome procedure. Germany pays more for its imports, and the cost of its exports is increased to buyers abroad. German officials feel that a particular hardship in reference to American trade was done them by the United States in invoking the countervailing duty provision of the tariff act, particularly as the law was intended to apply to a situation prevailing before the dollar was devalued.

By invoking the countervailing duties provided in Section 303 of the tariff act, Treasury officials stopped 95% of the normal flow of goods from Germany to the United States, German officials contend. If this meant that equivalent business went to American manufacturers, the Germans could understand. That is not the case, they say, but instead the orders are transferred to Czechoslovakia, or some other country with a depreciated currency.

Germany has declined to depreciate the mark, but has subsidized its exporters to the point where they will be on an equal footing with competitors in countries that have depreciated their currencies.

The Leipzig fair offered a good cross-section of German opinion. There were no conflicts in statements by many individuals as to the export subsidies. There is a regulation against sales abroad at a loss. There was agreement that this is strictly enforced. Exporters may not sell at a lower price than is charged when comparable articles are sold domestically. German exporters, however, are allowed to use block marks to the extent necessary to place them on an equal footing with competitors, but this must be established in each instance to the satisfaction of the board that handles exchange, it is explained. No export premiums are paid in connection with cameras and other goods that are readily salable.

Countervailing duties were not invoked by the U.S. for three years, and it is hard for German officials and manufacturers to understand why a change of policy was decided upon. Some of them call it a yielding to Jewish influence. Others think it was inspired by our State Department by way of retaliation for Germany's action in renouncing a paragraph in the commercial treaty of 1923. Germany contends she is not in a position to accord most favored nation treatment to the United States in the way the United States interprets that article. As a consequence Germany has been barred from the benefits of reductions that have come to most other nations as a result of the reciprocal trade agreements. It was pointed out in Leipzig that such a policy runs counter to the belief of Secretary Hull, who has argued that reduction of artificial interferences with the normal flow of international trade is one of the most effective moves toward world peace.

Synthetics Enter Diplomacy

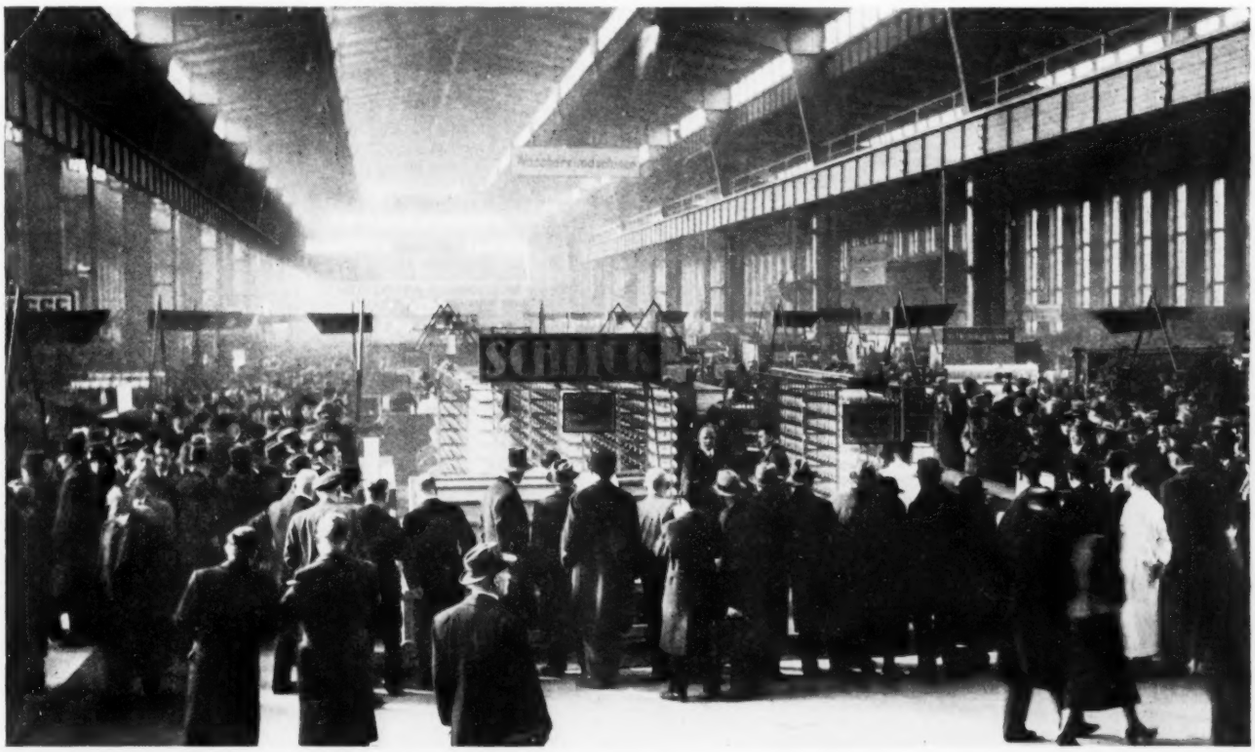
The more immediate reason now used in presenting the German argument in favor of adjustment of trade differences with the United States, is the possibility of developing a satisfactory substitute for cotton and wool. Since one-fourth of all German imports of raw material is for the textile industry, the incentive to develop substitutes is strong. An order was promulgated during the time the writer was in Germany under which maximum percentages of synthetic fibers had to be used in cloth purchased by the Government, including uniform cloth, upholstery and carpets.

Knitted goods composed entirely of staple fiber yarns were displayed at Leipzig as were many other new synthetic fiber products. There was a striking exhibit of rayon crepe dress material, as well as new lines of draperies. Printed fabrics were shown, said to be of better quality than any heretofore developed. A textile specialist in the person of John F. Huddleston, U. S. Consul at Dresden, inspected the exhibits and includes this comment in his official report:

"A large variety of novelty drapery fabrics was displayed at the recent Spring Fair at Leipzig. Special comment was made on the products of Meinhold & Sohn, particularly on a light, one-colored fabric, with a fine crepe relief showing flower designs. The types displayed ranged from coarse qualities to loose-woven fine materials resembling tulle. Preference was noticeable for cross-striped fabrics. For the cross stripes effective materials such as chenille or nub yarn, are now being used. The I-Werke displayed beautiful flower designs printed on Rhodiaseta tulle. Chintz fabrics are enjoying a marked preference in Germany at present, and a special novelty in this line is a gold-printed chintz.

"During the last year many experiments have been made in Germany regarding the use of staple fiber in carpet weaving. In this connection it is stated that German carpet manufacturers have been able to overcome certain difficulties encountered in the beginning in the use of synthetic fibers for carpets owing to the lack of sufficient resistance against pressure. In addition to the 'Vistra XT' and 'Flox' yarns which are being used at the present time to an extent of from 60 to 100% in carpet weaving (particularly in bouclé and velour carpets), the Wurzener Teppichfabrik, Wurzen, Saxony, is using a special staple fiber material, called 'Artilana', in the production of its carpets.

"The Vereinigte Seidenwebereien A. G., Krefeld, one of Germany's leading silk-weaving concerns, has had much success recently with novelty piqué materials, partly printed, with an admixture of 50% 'Vistra'. A good demand was also noticeable during the last few months for part linen laces mixed with 'Vistra', and for 'Wollstra' laces."



A general view of the textile machinery on display at the Leipzig Fair.

Wool-Quality Numbers

And spinning counts have spread apart—

A useful table showing their relationship today

By James H. Kennedy, Jr.
Lowell Textile Institute

ORIGINALLY A WOOL of 56s quality could be spun to 56s worsted count. Down through the years, however, wool-quality numbers have been applied to lower and lower qualities, with the result that today what is recognized as a 56s quality will spin only to 38s yarn and in fact will be unlikely to be used for anything finer than 36s. For these reasons, Mr. Kennedy's table showing the present relation between quality numbers and spinning counts will be found valuable.

A REVIEW of textile literature shows that a marked divergence of opinion exists among writers as to the definitions of, and the differences between, the wool-quality numbers and the worsted spinning counts or, as they are also called, the Bradford spinning counts. The extent of this confusion is indicated by the following quotations:

Hawkesworth[1] states: "I put my own version as to the real meaning of spinning counts, which, I am pleased to say, has been generally accepted as correct: As many 560 yd. as can be spun out of 1 lb. of top of combed wool represents the counts to which that wool can be spun. Take a 60s count; it really means that every pound of top can be spun into a yarn or thread 60x560, or 33,600 yd. long."

Again Hawkesworth[2] makes the following comparison in a table: "Comparison of Wool from Different Countries and the Counts to Which They Can Be Spun:

America	*Counts*	*America*	*Counts*
Extra fine	80s	Average	66s
Super fine	76s	Strong	60s
Fine	70s	Very strong	56s

Later Hawkesworth[3] states:

"Breeds	True Length	Fiber Diameter	Spinning Counts
Lincoln	12½"	1/400 to 1/500	32s to 36s"

Number of Hanks from Top

Cowley[4] states: "The spinning quality of any lot of wool is expressed by certain numerals, known as the 'count.' This count represents the number of hanks that can be produced from a pound of top of that type of wool. The quality is determined by the number of hanks procurable from a pound of top, or combed, and not from a pound of greasy wool."

Du Plessis[5] states: "In the classification of wool, quality numbers are used, which are based on the fineness of the wool and intended to denote the spinning properties of the wool. . . . These numbers denote that the wool of such a quality will spin so many hanks of yarn of 560 yd. each to the pound by weight. Actually 1 lb. of merino wool of 70s quality will not spin to 70 hanks or 39,200 yd. of yarn, for in the first place the wool has to be scoured, when it will lose heavily in weight. Then it has to be carded and combed, when it will lose further in weight by the removal of noils. The counts to which it will spin will depend upon the average length of the fibers of the carded sliver or the combed top; the longer the staple the less will there be overlap of fibers, and the greater number of counts will it spin to. Finally, there are factors like contour of fiber and others which are as yet unknown. However, these quality numbers have come to be generally accepted in the trade and to denote fineness more than anything else."

Smith and Haile[6] state: "60s—meaning a wool of certain quality, 60s is the quality of average Merino wool, and means that 1 lb. of 60s-quality top will spin 60 hanks of yarn, each 560 yd. long; 50s will spin 50 hanks, etc."

Hultz and Hill[7] state: "Spinning counts. Numbers applied to wool indicating the fineness of the yarn which can be spun from it. The numbers are derived from the worsted yarn numbers, which indicate the number of hanks of 560 yd. each that it takes to make a pound. The United States Bureau of Agricultural Economics has established standard grades, using both the spinning counts and the common American terms. Thus, the half-blood grade includes the spinning counts of 58s and 60s, and three-eighths blood wool is equivalent to 56s. Spinning counts are also called 'quality numbers.'"

Mary Brandon Potts[8] states: "The factor of fineness is the basis of the English system of grading known as the 'Bradford spinning-count system' which groups wool according to the number of hanks of yarn it will spin to the pound of clean wool, a hank being 560 yd. . . . The Bradford system is essentially the same as the numerical expression of the official wool-grade standards of the United States." The following table of numerical grades and equivalent wool-trade names is then given:

Numerical Grades (Bradford Spinning Counts)	Wool-Trade Grade Names (United States)
64s, 70s, and 80s	Fine
58s, and 60s	Half-blood
56s	Three-eighths blood
48s, and 50s	Quarter blood

Wool quality is one thing—spinning count, another.

46s ..... Low quarter blood
44s ..... Common
36s, and 40s..... Braid

Origin of System

The origin of this divergence of opinion is not difficult to find. Originally, when wool was spun on the Bradford spinning system, it was designated by numbers. These numbers meant that the finished yarn was such that it took that number of hanks, each 560 yd. in length, to weigh 1 lb. Thus 60s Bradford-spun yarn meant that the finished yarn had 60x560 yd. to the pound. In the same manner, 36s worsted yarn meant that the yarn was of such a size as to have 36x560 yd. to the pound.

Soon, however, wool which was suitable in diameter, length, and the other spinning properties necessary to produce yarn of a certain Bradford spinning-count number, came to be called by that number. Thus, if a lot of wool was suitable to be made into 36s worsted yarn, the wool itself came to be called 36s-quality wool. This wool-quality number was also referred to as "The London or Bradford Top-Makers' Count." Originally, then, the wool quality-count number and the worsted spinning-count number were one and the same thing: namely, a 36s-quality wool was used to spin 36s-count worsted yarn. In those days yarn, as a general rule, was spun to its limit capacity.

Down through the years, the diameter, length, and other spinning properties for each wool quality were not kept constant. Thus a spread developed between the wool-quality count and the worsted-spinning count. For example, a 60s wool count would not spin to 60s worsted-yarn count. Possibly it could be spun only to 50s as a maximum worsted spinning count.

This set of numbers for wool quality or grade is now fairly well standardized and varies very little from year to year. In the United States, the numbers start with 80s for wool of the smallest diameter and go to 36s for wool of the largest diameter, as shown in the accompanying table.

It should be distinctly understood that these numbers are arbitrary numbers that are used to designate wools of a certain diameter—and that alone. They do not directly consider length, evenness, strength, or other factors necessary to produce a good spin; and they do not bear any direct connection to worsted spinning counts. For example, a 56s wool quality is a wool of a diameter that is fairly well standardized in the trade. However, this wool will not spin commercially to 56s worsted spinning count. As a maximum it could probably be spun only to 38s.

Qualities and Counts Overlap

It happens that the wool-count numbers and the worsted spinning-count numbers overlap. Thus a 70s wool might be spun to 70s worsted yarn count. An 80s wool might be spun even finer than 80s worsted yarn; but, at the other extreme, a 36s wool could be spun only to about a 16s worsted-yarn count.

At the present time, due to widespread trapping of wool necessitated by keen competition and the desire for lower prices, wool cannot be spun to as high counts as formerly. Also the demand is for lower-count yarns, especially for the knitting trade, which now uses large amounts of worsted yarn annually. Such a wool as 56s wool count, which possibly could be spun to 38s yarn count, may now be spun only to 18s or 20s.

The wool-quality number considers one factor alone, and that is diameter. A good wool man can readily distinguish one quality from another by visual inspection or feel, or by a combination of the two. During the last few years rapid strides have been made in the technique of measuring wool diameters microscopically by the so-called "wedge method."

Evaluating Quality

When spinning quality is evaluated, many factors must be considered in addition to diameter. Some of these factors are length, strength, handle, type of wool, crimp, curl, etc. Length can be looked at from different viewpoints. Ordinarily the longer the fiber for a given wool quality, the better and finer it can be spun. However, often a shorter fiber must be chosen to give the desired feel in the finished fabric. Extra or unusually long fibers for a given wool quality, as from a sheep that has not been clipped for two years, are undesirable (even if obtainable in large quantities), because the processing machines cannot handle them. The maximum, minimum, and average lengths help to determine the spinning capacity.

Wools that are not strong, such as tender, mushy, and run-out wools, detract from the spinning capacity in proportion to the quantity present. Certain wools have a poor handle and do not spin so well as other wools of equal length and diameter. Pulled wools may be a bit harsh and, as a result, not spin to as high counts as similar shorn wool. It is common knowledge that foreign crossbreds from one source spin a few counts better than wools of the same length and diameter from a different country. Wools with crimp or curl spin better than wools lacking in these factors. Two-ply yarns can be spun two to four counts finer than single yarns. Dyed stock is usually spun two counts less than the same stock not dyed.

In summation, wool-quality number and worsted spinning count are two separate, distinct terms and should not be used interchangeably. Wool-quality number should be considered as an identification given to wool of a certain diameter. This number merely takes the place of a name. Worsted spinning count is the number of hanks of worsted yarn, each 560 yd. in length, that weigh one pound.

Comparison of Wool-Quality Numbers and Worsted Spinning Counts for American Wool

Wool Quality Number	American Blood Grade	Average Diameter Microns	Average Diameter Inches	Maximum Bradford or Worsted Spinning Counts	Worsted Spinning Counts Ordinarily Spun
80	Fine	19.5	0.00077	80	52–70
70	Fine	21.0	0.00083	70	48–60
64	Fine	22.0	0.00087	60	40–50
60	Half Blood	23.5	0.00093	50	30–44
58	Half Blood	25.0	0.00098	46	28–40
56	Three-eighths Blood	27.0	0.00106	38	20–36
50	Quarter Blood	30.5	0.00120	34	18–32
48	Quarter Blood	33.0	0.00130	30	18–28
46	Low Quarter Blood	35.0	0.00138	28	18–26
44	Common	36.5	0.00144	26	16–24
40	Braid	38.5	0.00152	22	15–20
36	Braid	39.5	0.00157	18	6–16

[1] Hawkesworth, Alfred. "Australian Sheep and Wool." Sixth Edition. P. 438

[2] *Ibid.* P. 489

[3] *Ibid.* P. 368

[4] Cowley, Clarence E. "Classing the Clip." P. 61

[5] Du Plessis, A. F. "The Marketing of Wool." P. 73

[6] Smith & Haile. "The Sheep and Wool Industry of Australia and New Zealand." Third Edition. P. 211

[7] Hultz & Hill. "Range Sheep and Wool." P. 239

[8] Mary Brandon Potts, U. S. D. A., A. H. D. No. 13. P. 2

Staple on Cotton System

What experience has shown to be best methods of handling cut rayon in the mill

By Heath O. Kennette
E. I. du Pont de Nemours & Co.

RAYON staple has been produced for a number of years but only recently came into prominence. Because of its ability to blend readily with all other known fibers, it offers almost unlimited possibilities in fabric development. At the present time, it is being used extensively in dress goods, men's suitings, necktie fabrics, upholstery, plushes, towels, knitted outerwear, men's hose, and a great variety of novelty fabrics.

The staple as received by the mill is in a bale, similar in size and density to that of cotton.

Rayon staple is manufactured by both the viscose and acetate processes and can be produced in several degrees of luster, such as bright, semidull, and dull. The denier per filament can also be controlled to any desired size. The most common sizes at present are 1.5-, 3-, or 5.5-denier per filament, 1½" in length. The fiber can be cut to any length desired. The length and fineness of the fiber affect the strength of the yarn. The longer the fiber up to 2 in., and the greater the number of filaments in the cross-section of the spun yarn, the stronger the yarn.

Mr. Kennette presented this paper, one of the most detailed and practical yet written on the processing of rayon staple, at a meeting of the American Society of Mechanical Engineers, at Greenville, S. C., April 7.

The hand and character of the fabric can be changed by the use of different sizes of filaments. The 1.5-denier-per-filament staple produces a very soft fabric. The 3- and 5.5-denier-per-filament produce fabrics with a different hand more closely resembling different grades of wool. By blending these fibers together, and with other fibers, such as wool and silk, many desirable and unusual effects are obtained. The blending operation is usually done before the picking, but the type of yarn desired governs where the blending will be made.

The proper conditioning of rayon staple by the cotton mill before processing, and the proper control of relative humidity through the mill, particularly in the picking and carding operations, have been found to be most helpful. The staple should be opened, fluffed up, and allowed to normalize in a humidified area under mill conditions for at least 24 hours before running. The relative humidity at this stage and throughout the carding and spinning mill should be maintained close to 55% for viscose-process staple and close to 65% for acetate staple.

Picking and Carding

As rayon staple, both viscose- and acetate-process, is supplied in a reasonably well-opened state, free of foreign matter, no cleaning operation is required. The main object of the picker is to prepare the staple for good carding by thoroughly opening it and producing a uniform, well-formed lap. In general, the least amount of picking employed to produce a satisfactory lap, the better will be the condition of the fiber.

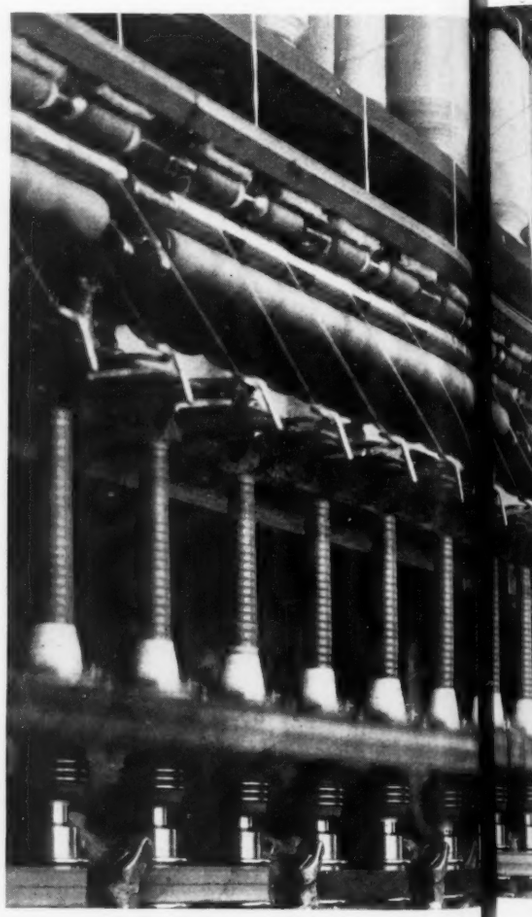
The question as to whether blade or carding beater gives the best results is open to much debate. Both types are being used with good results. Generally speaking, a carding beater will cause more neps than a blade beater; but by thoroughly breaking up the small lumps and fleecing of the staple, a more uniform lap is produced.

The speed of the beaters depends largely on local conditions and can best be answered by the mill. We have found that blade beaters operating near 1,000 r.p.m., and carding beaters near 800 r.p.m., give very good results. Fan speeds slightly in excess of the beater speeds work satisfactorily.

Because of the greater density of rayon staple as compared to cotton, it is generally necessary to reduce the speed of the hopper feed. The production of the picker on rayon staple is comparable to that of a good grade of cotton. The weight of the lap depends largely on the counts to be produced. A 12- to 14-oz.-per-yard finished lap gives a very good working weight.

Rayon staple can be successfully handled by the conventional cotton pickers or by one-process pickers, without major changes.

It has been found in general that, if the card is in good shape and is doing satisfactory work on cotton, no trouble will be experienced in changing over to rayon staple. Normal card settings used on a good grade of cotton work equally well on staple. The top flats should be run as slow as possible, approximately 1 in. per minute, and the top edge of the stripping plate should be set as close as possible so as to minimize the amount of strips. These strips normally can be reworked without trouble.



For processing rayon staple

Sometimes trouble is experienced with the web sagging or breaking. This can usually be corrected by adjusting the comb and by maintaining the proper relative-humidity conditions. However, under some conditions it is necessary to increase the speed of the calender rolls.

Much has been written about removing the mote knives and replacing them with a steel under-casing, but we have

not found this necessary. Normally, the finer the wire of the card clothing up to 120 or 130, the better the results. We have also found that straight-wire and metallic card clothing give very good results.

The following card settings have been used successfully:

Doffer speed.....6 to 9 r.p.m.
Cylinder speed....165 r.p.m.
Lickerin speed....360 to 425 r.p.m.
Doffer to cylinder...007
Lickerin to cylinder 007
Flats to cylinder...010 (all around)
Feed plate to lickerin 012

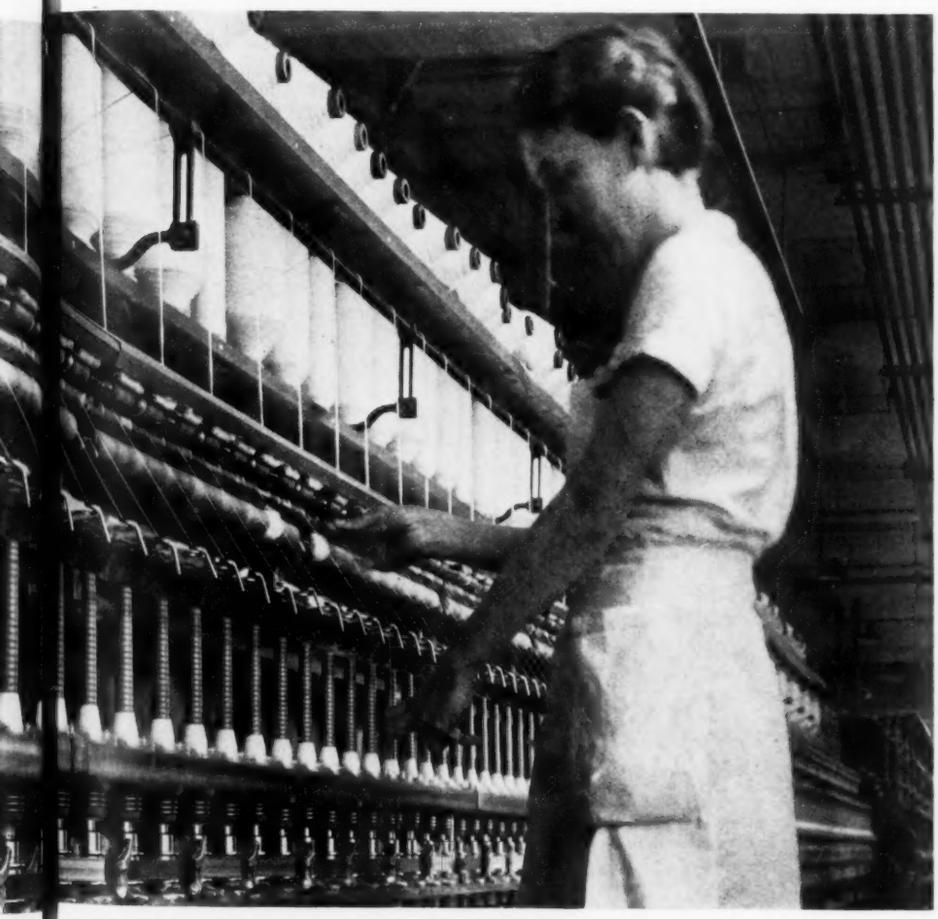
It has been found that much of the trouble experienced in subsequent operations is traceable to too close a roll setting on the drawing frames. Rayon-staple fibers are easily stretched; therefore much care must be given to proper spacing of the rollers. This will be governed largely by local conditions, such as the bulk of the sliver produced, weights on the rollers, type of rollers, and such. We prefer leather top drawing rollers, but metallic rollers also give good results. Judgment must be used in adjusting the tension gear and selecting the proper-size trumpet to prevent stretching.

The following roll settings have given good results on 1.5-denier, 1½-in. staple under average cotton-mill conditions.

First to second.....1⅞ in.
Second to third.....2 in.
Third to fourth.....2⅛ in.

The speed, draft, and production of rayon staple on the drawing frame are comparable to those of long-staple cotton.

Because of its nature, rayon staple does not require the twist that cotton does; and therefore the front-roller speed on the fly frames would be excessively high unless some change were made. Normally the speed of the fly frames is reduced about 25 to 30% so as to give the same front-roller speed as used on cotton. Care must be used in selecting the lay and tension gears so as to build a good package without stretching the roving. Drafts normal to long-staple cotton give satisfactory results.



no major changes in cotton equipment are necessary.

We have found that the following twist factors will give satisfactory results on 1.5-denier, 1½-in. staple:

Slubber, .70 to .75 times the square root of the hank roving produced.

Intermediate, .75 to .80 times the square root of the hank roving produced.

Roving frame, .80 to .90 times the square root of the hank roving produced.

We have found that leather top rollers give the best results on fly frames. Local conditions, twists, roller weights, sizes of roving, and the like govern roll settings. We have used the following roll settings satisfactorily:

Slubber and Intermediate	Front to second	1⅛ in.
	Second to third	2 in.
Fine frames	Front to second	1⅞ in.
	Second to third	1⅛ in.

Spindle speeds within the following limits have been used successfully:

Slubber .....450 to 650 r.p.m.
Intermediate .....650 to 950 r.p.m.
Fine frame .....950 to 1250 r.p.m.

Spinning

In the spinning of rayon staple, the drafts, speeds, and production normal to cotton can be used. It has been found that rayon staple yields its maximum strength with a twist factor between 2.75 and 3.25. Sometimes it is desirable to go higher than this to give the desired hand to the fabric. Rayon staple can be twisted to produce a very nice crepe yarn; but as we go up in twist, the strength of the yarn comes down.

Because the back rollers on the spinning frames are non-adjustable and are set at less than the fiber length of 1½ in., the floating middle top roller has become standard practice in spinning rayon staple.

Cork top spinning rollers give excellent results on crepe, coarse, and medium yarns. On fine yarns, leather top rollers give the best results.

Generally speaking, the conventional system of drafting has given better results on medium and fine yarns. However, the long-draft systems have been used successfully on coarse counts.

Any type of spooling and warping satisfactory for cotton can be adjusted to use rayon staple satisfactorily.

The cotton slasher is used on rayon staple principally because of the large volume of moisture to be dried out and the fact that this equipment is available in most mills. The slasher should be equipped with driven drums and temperature controls. The stretch should be held down as low as possible and should not go much over 1½%.

The question as to what type of size to use depends largely on the type of finishing the cloth will get. Good weaving results can be obtained from both gelatin- and starch-base sizes.

Weaving

As to weaving of rayon staple, it should be considered from the standpoint of rayon rather than cotton. Rayon staple, like denier yarn, is subject to variation in humidity and tension; and for this reason the same precautions should be observed. If the loom is set up with this in mind, no trouble will be experienced in weaving.

A Boon to Velvet

Crush-resist process is widening markets for pile fabrics

IT IS indisputable that the modern finishes are becoming increasingly important in selling textile merchandise. An outstanding example is the rapid rise to popularity in the transparent velvet industry of the crease-resisting process of Tootal Broadhurst Lee Co., Ltd. The story of "crush-resist velvets," as they are known, has a moral for the textile industry. Generally, it shows how the use of a utility process can strengthen prices, stimulate demand, and extend markets for a fabric.

Crush-resist velvets have had a quick success. Introduced in 1935, they made steady progress through 1936; at the end of the first quarter of 1937 indications were that 50% of all transparent velvets would be crush-resist this year; it is now expected that 1938 will see virtually the entire output of the industry being treated with the process.

The story has four phases as follows: (a) processing transparent velvets; (b) identification of fabrics and garments; (c) processing other pile fabrics; and (d) sales promotion.

Processing transparent velvets: Most velvet manufacturers do their own processing. It is estimated that equipment outlay necessary for the task averaged $25,000 per company, though some spent considerably more. At the outset, application of the process was reduced to three problems: odor, draping quality, and color control. Experimentation gradually eliminated these difficulties. Odor was eradicated. Fabric flexibility was achieved. The color problem proved obstinate for a time because application of the solution and the heat changed fabric colors; finally this difficulty too was overcome. The cost of applying the process is steadily being reduced as mills become more familiar with the method, and it is expected that further economies will yet be effected, particularly as regards the slowing-up of production which the application of the finish involves.

Identification of Fabrics and Garments: Under the rules of Tootal Broadhurst Lee Co., Ltd., licensees are required to print their license numbers at both ends of each piece of velvet processed under that company's patents. Printing of the license number on the fabric protects all parties against any false labeling or misrepresentation of non-processed velvets. While this number disappears in the manufacture of garments, it carries through the store to the consumer in piece goods. Identification has become practically complete with respect to weavers and cutters who handle the goods.

In the field of ready-to-wear, which is the chief outlet, the only consumer identification carrying through the store is the sewn-in label or the hang tag. The sewn-in labels are supplied to cutters by mills, and this service is now satisfactorily established. The problem of achieving a complete follow-through by stores on hang tags, remains a difficult issue calling for further educational effort, though much progress already has been made in that direction.

Application of Process to Other Pile Fabrics: The success of crush-resist velvet naturally has quickened interest in the prospects of applying the process to other pile fabrics. Stiff velvets take the process just as easily as transparents, and some are so treated. At present, the process is not applied to cut-out or novelty velvets; however, mills find these will process just as well as the staples. So far, the problem of applying crush-resistance to cotton velveteens or to upholstery velvets has not been solved on a commercial scale, but it is felt this problem soon will be overcome as continuous research and experimentation are taking place.

Sales Promotion: Trade and consumers are being rapidly convinced of the added value in crush-resist velvets, due to increased serviceability and economy. Their resistance to the higher price of the processed fabrics as against the non-processed is lessening steadily, helped also by a lowering in the differential itself. The differential, originally 65 to 70c. was reduced April 15, to 35c. on colors and 40c. on black, when manufacturers announced $1.35 as the Fall 1937 price for crush-resist lines. Velvet manufacturers expect the use of the process eventually to increase the industry's total consumption of yardage, especially in daytime wear, where crush-resistance is particularly desirable.

The merchandising of crush-resist velvets, as conducted by The Velvet Guild, under the competent leadership of Mrs. June Hamilton Rhodes, managing director, has two main aspects: (a) progress to date, and (b) plans and problems ahead.

Highlights which may be found in progress to date are: Educational work is helping to overcome the idea held by both retailers and consumers that velvet, being a luxury fabric is too costly and too fragile for general use; as result of this education and stress on the advantages of the crush-resist process, quality velvets are now selling to the volume trade, and velvet dresses are retailing at as low as $10.75 net. Garment manufacturers and piece goods buyers are enthusiastic about the processed fabrics, thanks to excellent sales last year.

Plans and problems to be seen ahead include: Increased emphasis on fabric identification; designing of a new Guild label to unite the crush-resist factor with the traditional beauty appeal of velvet; promotion of "wardrobe" as against unit selling in crush-resist merchandise, stressing the fact that the process now is applied to velvets for all apparel needs, including daytime, semi-formal and formal, and also millinery, accessories, pajamas, negligees, etc.; finally, experience shows that the process gives velvets increased soilage resistance, and this aspect is being studied for possible promotional use later, especially in the merchandising of white and pastel velvets.

CRUSH-RESIST VELVET lends itself well to everyday wear, as shown in this town suit by Helen Cookman, which is made of covert cloth with velvet blouse and velvet banded coat and skirt, worn with velvet banded hat. Courtesy Velvet Guild.

Textile School Deans

Meet in Asheville

Group picture taken at meeting of textile school deans at Asheville, N. C. Left to right, W. D. Fales, Henry W. Nichols, Thomas Nelson, W. M. McLaurine, Douglas G. Woolf, E. W. France, F. M. Feiker, M. E. Heard, A. H. Williams, J. B. Bagley, George Walker, H. H. Willis, C. A. Jones, Stuart W. Cramer, E. W. Camp and E. T. Pickard. Charles H. Eames took the picture. Some of those in the group apparently took seriously his admonition to "look at the birdies."

A PRACTICAL discussion of the relationship between textile schools and the industry they serve was one of the principal features of the semi-annual conference of textile school deans held under the auspices of the Textile Foundation at Grove Park Inn, Asheville, N. C., April 12 and 13. Frederick M. Feiker, who conducted the educational survey for the Foundation and who continues in an advisory capacity, presided at the meeting. Stuart W. Cramer, a director and the treasurer of the Foundation, was present and participated in the discussion. Franklin W. Hobbs, chairman of the Foundation, was unable to attend. This was the first of the series of semi-annual conferences he has missed. Edward T. Pickard, secretary of the Foundation took an active part with Mr. Feiker in the direction of the meeting.

Speaking first for the school deans, President Chas. H. Eames of Lowell Textile Institute urged manufacturers to continue their interest in the educational institutions in the industry; to take graduates into their mills and follow their progress carefully; and to stimulate research in the schools by bringing their problems there and "exerting pressure" on members of the instructing staffs to carry on research.

Mr. Cramer, speaking for the Foundation and the industry, stated that he was deeply interested in this educational movement as one of the most important the Foundation is sponsoring. He recognizes in this movement an opportunity for the adjustment of differences of opinion on educational procedure, and consequently for the development of a coordinated approach to the problems involved.

William M. McLaurine, secretary of the American Cotton Manufacturers Association, in an inspirational talk raised the question whether the schools were selecting their undergraduates carefully enough and, particularly, whether they were preparing their students to do certain specific jobs. "Don't graduate a student unless you and he have some idea where he is going from there," he advised.

Study Industrial Relations

Mr. McLaurine also recommended particular attention to research and to the study of industrial relations. The latter problem, he said, is "a great complexity that has become very much alert and alive in the last few years; you can be as indifferent to it as you like, but it still stands there."

Douglas G. Woolf, editor of TEXTILE WORLD, lauded the textile school program as the most important movement sponsored by the Foundation. He pointed out that textile manufacturers are now seeking young executives and are willing to pay good salaries for them—an indication that there really is promise for those who now enter the profession of textile engineering through the textile schools. He also urged the development of teaching material on the subject of industrial relations.

Replying to the latter suggestion, Dr. A. H. Williams of the Wharton School of the University of Pennsylvania pointed out that a section of the text on economics which has been developed under the sponsorship of the Foundation deals with industrial relations and could be used as a basis for further treatment.

Dr. Williams' presentation of these teaching materials on textile economics was another of the main features of the conference. They cover four subjects: Economics in general; management; marketing; and textile costing. Intensive consideration of the text on the latter subject occupied a good part of the meeting.

Dr. B. F. Brown, dean of the Economics Department of N. C. State College, lead a discussion on the teaching of textile economics. At that session, the meeting also explored the possibility of conducting a 10-day seminar in New York for the men from the economics department who would handle the economics text. The proposal was received most favorably by all present, and has been referred to the directors of the Foundation for consideration.

Another important project undertaken by this group—that of the development of the technical texts for the teaching of production methods—was reported on by H. H. Willis, dean of the textile school of Clemson College.

The success of the conference was largely due to the active participation of the textile school deans in the discussion. Those in attendance were: E. W. France, Philadelphia Textile School; Chas. H. Eames, Lowell Textile Institute; Henry W. Nichols, Bradford Durfee Textile School; George Walker, New Bedford Textile School; W. D. Fales, Rhode Island School of Design; Thomas Nelson, North Carolina State College; H. H. Willis, Clemson College; C. A. Jones, A. French Textile School, Georgia School of Technology; E. W. Camp, Alabama Polytechnic Institute; J. B. Bagley, Texas Textile School; and M. E. Heard, Texas Technological College. Wires of regrets at inability to attend were received from Franklin W. Hobbs, chairman of the Foundation; R. W. Philip, editor of *Cotton;* and William H. Dooley, principal of New York Textile High School.

Our Own **DYEING ORDER**

Order No. 4

Dye House

Date Nov. 9, 1936

Please enter our order as follows

Fast to LIGHT – Symbol "F L"
Fast to WASHING – Symbol "F W"
Fast to BLEACHING – Symbol "F B"

M. O. NO.	STYLE	LOT NO.	YARN CONSTRUCTION	POUNDS	COLOR	COLOR CODE	FASTNESS QUALITY	WEEKLY DELIVERIES EXPECTED 11/7	11/14	11/21	11/28	12/5	12/12	12/19	12/26	1/2	Comm.
436	26450	14	50 C.P. 37 4.50	300	Pink	7004	F.B.	30	30	30	30	30	30	30	30	30	1/9
				300	Black	1001		30	30	30	30	30	30	30	30	30	1/9
				300	Brown	5001		30	30	30	30	30	30	30	30	30	1/9
				300	Pink	7021		30	30	30	30	30	30	30	30	30	1/9
				300	Maize	6005		30	30	30	30	30	30	30	30	30	1/9
				300	Aqua	4004		30	30	30	30	30	30	30	30	30	1/9
				1800													

ORIGINAL TO DYE HOUSE
1st COPY TO WARPING OR QUILLING
2nd COPY TO SUPERINTENDENT
3rd COPY TO YARN STORES
4th COPY TO FILE

KIND OF YARN	TOTAL POUNDS	WEEKLY DELIVERIES OF GREY YARN TO DYE HOUSE 11/7	11/14	11/21	11/28	12/5	12/12	12/19	12/26
50 C. P. 37 4.50	1800	900	300	300	300				
45 C. P. 37 5.25	1000		1000						

REMARKS: DELIVERIES CAN BE MADE EARLIER BUT NOT LATER THAN DATES GIVEN.

Fig. 1

Dyehouse Records

Forms which permit intelligent planning of week's work

By William B. McKay

THE method of recording dyeing orders described in this article was developed originally for use in the package-dyeing department of a fancy weaving mill. It can be readily adapted for use by job dyers and for skein or beam dyeing. Intelligently used, the method will be of great assistance in planning the week's work in the dyehouse.

The first step in establishing the system is for the dyehouse to supply its customers with a color card bearing color code numbers. The order received from the customer will give the pounds to be dyed, date wanted, colors, code numbers, kinds of yarn, and fastness requirements. This information is transferred to the Dyeing Order Form shown in Fig. 1. If the customer submits a sample for shade, the dyer should determine the color code number and note it on the Dyeing Order. On the lower part of Fig. 1 is a place to enter deliveries of gray yarn from the weaving department to the dyeing department. In the case of job dyers, this should be adapted to show the receipt of gray yarn from customers.

Next an Orders Received Form (Fig. 2) is made out for each color on the order, showing date of order, lot number, customer's order number, total pounds wanted, and the distribution by weeks of same. If the next order received calls for some of the colors for which Orders Received Forms already have been made out, add the pounds, etc., as above and make out new forms for the balance of the colors. Continue entering orders on these forms for the rest of the week.

On Monday total the first column (representing the first week 11/7, Fig. 2) of the distribution of each color sheet. If a dyeing machine is available which will take care of this amount, transfer the pounds to the first column (also 11/7) of the Summary by Weeks Form (Fig. 3) opposite the color and color code. If, however, the machine available is too large, take enough pounds from the second column of Fig. 2, add it to the total of the first column, and enter the sum opposite the word "Delivered," making sure the pounds taken to complete the machine load are subtracted from the following week's distribution. Then carry the delivered pounds to Fig. 3.

If the total of the first column of distribution (Fig. 2) is greater than the capacity of the machine, place the number of pounds the machine will take opposite the heading "Delivered," subtract from the total, enter the difference opposite "Over Due Carried Forward," enter the same amount in the next column opposite "Over Due Brought Forward," and carry the pounds opposite "Delivered" to Fig. 3, opposite the color.

Fig. 3 now will show the pounds of each color to be dyed the first week. As further orders are received and entered as described above, Fig. 3 will give an accurate picture of the work ahead for subsequent weeks.

ORDERS RECEIVED AND WHEN WANTED

COLOR PINK F.B. CODE 7021

DATE 1936	LOT NO.	THEIR ORDER NO.	TOTAL POUNDS	WEEK WANTED 11/7	11/14	11/21	11/28	12/5	12/12	12/19	12/26	1/2
Nov. 5	12	2	160	14	14	14	14	14	14	14	14	14
Nov. 7	13	3	250	25	25	25	25	25	25	25	25	25
Nov. 9	14	4	300	30	30							
			Over Due Brought Forward		19							
			TOTAL	69								
			Delivered	50								
			Over Due Carried Forward	19								

Fig. 2

SUMMARY BY WEEKS OF DYEING ORDERS

COLOR	COLOR CODE	POUNDS BY WEEKS 11/7	11/14	11/21	11/28	12/5	12/12	12/19	12/26	1/2	1/9	1/16
BLACK	1000											
"	1001	30										
BLUE	2005	25										
Agda	4004	44										

Fig. 3

Crabbing

is crucial operation in

Finishing Gabardines

By G. L. Atkinson

PROPERLY finished, gabardines are smart, firm fabrics, with a clear twill effect and adequate draping qualities. Improperly finished, gabardines have a limp and raggy handle, with cross-twill effects, chafe marks, crow-footing, and other defects. Most of these defects are due to improper preparation of the goods or to omission of the crabbing operation. Some finishers, knowing the faults which occur if the crabbing process is not carried out correctly, dispense with this operation and scour the goods without a preliminary setting. This, in the writer's opinion, is a mistake. For best results, gabardines should be crabbed; but crabbing must be done with the greatest of care.

Excessive Tension

Crabbing of narrow pieces with wider ones may lead to irremediable faults in the type of fabrics under discussion. The first step, therefore, is to measure the width of the pieces before they are sewn together for crabbing. Cross-twilling, glazing, and flattening of the twill are due usually to running of too many pieces in the crab at one time or to excessive tension on the goods during crabbing. Accordingly, the batches sewn up for crabbing should consist of not over four to six pieces; if more than six pieces are treated at once on the crab, excessive pressure may be exerted on the innermost pieces on the crabbing roller and give rise to the above-mentioned faults. If trouble is expected, it is better to keep to four pieces in a batch for crabbing purposes.

After the pieces have been sewn together with a crabbing wrapper on each end of the batch, they are wound dry, under moderate tension, on a beaming roll. If a two-bowl crab is used, the goods should be set in both bowls of the machine; if a three-bowl machine is employed, the goods can be rinsed with warm water in the third bowl. Since steaming imparts a thin, papery handle, the setting has to be accomplished by the boiling liquor in the bowls of the crab. Unless the goods are thoroughly set, the effect may be lost in the subsequent scouring operation. On the other hand, excessive tension will give rise to the faults already noted. It is apparent that considerable experimenting will have to be done to find the conditions which give the best results with the least danger of damage to the goods.

Frequently addition of 2% of borax to the crabbing liquors will be of assistance in getting a more permanent set and will permit the operation to be speeded up somewhat. Ordinarily, the goods should be treated for 3 to 4 min. in each of the two bowls. Particular care must be taken to avoid excessive tension when the pieces are running from the first to the second bowl, as at this time they are in a plastic state and can easily be damaged.

Style silhouette courtesy of Hart, Schaffner & Marx; Fabric sample courtesy of Associated Wool Industries, shown true size

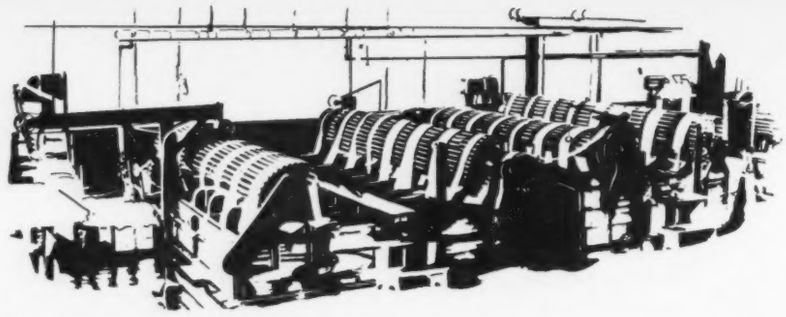
Precautions in Scouring

Scouring of gabardines is not difficult, so far as cleansing of the fabric is concerned. There is danger, however, that cloth faults, such as crow-footing, chafing, creasing, and cockling, may arise. The temperature of the scouring solution should be kept as low as possible, and in no case should exceed that of the crabbing liquors. Scouring time likewise should be kept down, as too much cover is undesirable. Addition of a small amount of soda ash to the scouring solution will prove beneficial; but too large an amount will tend to harshen the goods. Thorough washing of the fabric in warm water, followed by a cold rinse, is necessary to remove all of the soap. During the scouring and washing operations the goods should be well drafted out.

No particular difficulties should be encountered in dyeing and drying if the usual precautions are taken. After dyeing, the goods should be rinsed well, extracted, and dried. Overdrying or baking should be avoided to prevent harshness in the finished fabrics.

In shearing, the objective is to have the face of the fabric clear and bold and to leave cover on the back to give firmness to the handle. Usual procedure is to give one or two cuts, face and back, on a hollow- or spring-bed machine, followed by a final cut on the face on a solid-bed machine.

After perching, those goods which are satisfactory are conditioned and decated. In decating, the tension should be moderate, it being better to err on the light side, rather than to have excessive tension. The fabric is steamed on the decating machine and run off at steam heat. Lay marks can then be removed and the handle improved by giving about six ends on an open steamer. Finally the goods are pressed and, if necessary, steamed at open width to remove any excessive glaze.



Silk-Weighting Table

Shows conditions to be observed in tin-phosphate-silicate process

By Robert Schmeidler
Herstein Laboratories, Inc.
Consulting Chemists, New York

IN the accompanying table are given data on the tin-phosphate-silicate process of silk weighting. So far as is known, this information has not been previously published in a form which shows both the conditions to be observed and the defects or inefficiencies to be expected if the best practice is not followed. The primary purpose of the table is to disclose just what conditions are responsible for any trouble which may occur in silk weighting. For example, weak goods indicate that the tin tetrachloride is too high in temperature or specific gravity or too low in acidity, or that the sodium silicate is too high in temperature or specific gravity or time of treatment in it is too long. It is assumed that the reader is familiar with the silk-weighting process; therefore no details are included on washing or handling the fabric or on the equipment.

1. Tin Tetrachloride		2. Sodium Phosphate		3. Sodium Silicate	
Optima	***Defects from Deviations***	***Optima***	***Defects from Deviations***	***Optima***	***Defects from Deviations***
Acidity Ratio 1.20 to 1.30	High — Low weights. Low — High weights; weak goods; danger of cloudy bath.	Acidity pH 7.5 to 8.0	High — High weights. Low — Low weights.	Alkalinity 3 Na_2O: SiO_2	High — High weights. Low — Low weights..
Temperature 20° C.	High — High weights; weak goods. Low — Low weights.	Temperature 60° C.	High — Not critical. Low — Low, uneven weights.	Temperature 45° to 60° C. (critical)	High — High weights; weak goods. Low — Low weights.
Time 35 min.	Long — No harm; decreased production on equipment. Short — Low, uneven weights; dark-colored spots on dyed goods.	Time 13 min.	Long — No harm; decreased production on equipment; increased labor cost. Short — Low, uneven weights.	Time 20 min.	Long — Danger of high weights and weak goods; decreased production on equipment; increased costs. Short — Low, uneven weights.
Specific Gravity 17° to 29° Be.	High —Waste of chemical; high weights; weak goods. Low — Low weights; dark-colored spots on dyed goods; danger of cloudy bath.	Specific Gravity 6° Be. (hot)	High —Waste of chemical. Low — Low, uneven weights.	Specific Gravity 1 to 3° Be. (hot) (critical)	High — High weights; weak goods. Low — Low weights.
Impurities NaCl	High — Low weights; dark spots on dyed goods. Low — Waste of chemical; high weights. (It is, in general, safer to have more NaCl in later passes than in earlier.)	Impurities Sn; NaCl	(Not critical. Probably presence of reasonable amounts of NaCl can give saving of chemical.)	Impurities P_2O_5	High — Low weights; danger of cloudy bath. Low — Waste of chemical.

Staple Cotton Fabrics

Crepes

By John Hoye

Fabric Technician,
W. Harris Thurston
New York

THE DISCUSSION of crepes which Mr. Hoye started in the last issue is continued herewith in the seventeenth installment of the series.

IF A WARP crepe is desired, *Z*- and *S*-twist crepe yarns are used in the warp only, the filling being usual weaving yarn with ordinary twist. If filling crepe is desired, *Z*- and *S*-twist crepe filling yarns are used with ordinary warp weaving yarns. In some crepes, the crepe yarn used is all *Z*-twist instead of both *Z*- and *S*-twists. When crepe yarn of all *Z*-twist is used, the crepe effect produced is all one way and is, as a rule, not as pronounced as when *Z*- and *S*-twists are used. It is the usual practice to tint the *S*-twist crepe yarns in slashing, in order to distinguish them from the *Z*-twist yarns in beaming and drawing in through harnesses and reed.

In finishing crepes, a high percentage of contraction takes place and the finisher usually specifies the percentage of working allowance required, which varies according to the nature or type of crepe.

Full or balanced (box) crepes.—2 *Z*-, 2 *S*-twist crepe yarns (4x4 or more) arranged alternately in both warp and filling.

Filling (box) crepe.—Ordinary warp weaving yarns, 2 *Z*-, 2 *S*-twist crepe yarns (4x4 or more) alternating.

Filling crepe.—All *Z*-twist crepe filling yarn, ordinary warp yarn.

Warp crepe.—2 *Z*-, 2 *S*-twist crepe warp yarns (4x4, 6x6, etc.), ordinary filling yarn.

Warp crepe.—All *Z*-twist crepe warp yarn, ordinary filling yarn.

Matelassé crepes.—These are novelty-design crepes usually with an all-over "blister" effect, or with a distinctive crinkly stripe effect running lengthwise. These crepes are formed by interlacing crepe yarns with ordinary yarns in both warp and filling, or the latter only. The weaves are usually small dobby designs woven on box looms. When finished, the crepe yarns shrink, puckering up those parts of the cloth woven with ordinary yarns to form regular "blistered" or "quilted" effects throughout the cloth. Novelty matelassé crepes are made of all cotton, as well as cotton and rayon.

If the crepe-twist yarn is used only in the filling, 2 or more picks are woven alternately with 4, 6, or more picks of ordinary-twist filling. The crepe filling yarns are interlaced so that they float at intervals over several warp yarns on the back of the cloth. When finished, these crepes shrink, pulling in the cloth at these places and forming distinctive crinkle-stripe effects running lengthwise on the face of the cloth.

Uses of crepes: Dresses, kimonos, scarfs, underwear, beach robes, bathrobes, draperies, summer dresses, etc.

Yarns: Usually combed and in the range of 30s to 50s.

Examples of yarn crepes:

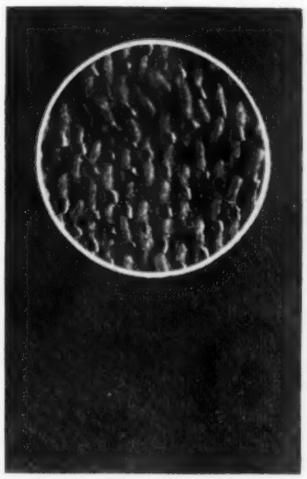
Balanced Box Crepe—46" gray, 36" finished, 42x42, 2 *Z*- and 2 *S*-twist crepe yarns in warp and filling.

Filling Box Crepe—52" gray, 40" finished, 88x72, ordinary warp yarn, 2 *Z*- and 2 *S*-twist crepe yarns in filling.

Filling Crepe—40" gray, 29" finished, 56x40, 5.30 yd., ordinary warp yarn, all *Z*-twist crepe yarn in filling.

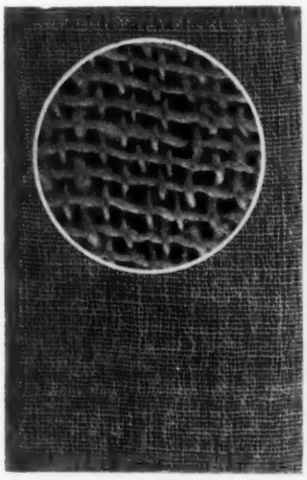
Warp Crepe—40½" gray, 35½" finished, 48x48, 15s cotton crepe warp (6 *Z*-twist by 6 *S*-twist), 150/40 denier rayon filling.

Matelassé Crepe—45" gray, 35½" finished, 84x76, 3.65 yd., every fourth warp-end, crepe-twist; filling, 2 picks colored crepe-twist, 6 picks ordinary twist, alternating; dobby weave.

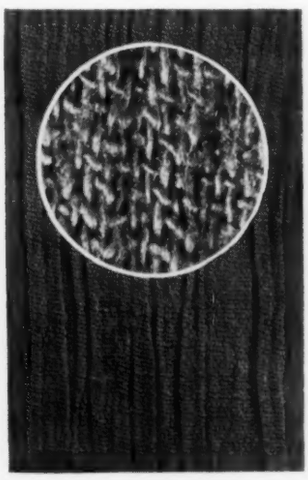


Warp Crepe (6 and 6), 40½", 48x48, 15s Combed Cotton Crepe Warp 150/40 Denier Rayon Filling.

The two illustrations on page 175 of our last issue presenting gray and finished versions of "Balanced Box Crepes" were properly captioned as to the magnified portions. The fabrics themselves, shown true size, were transposed, the one on the left being in fact the finished fabric and the one on the right being the gray.

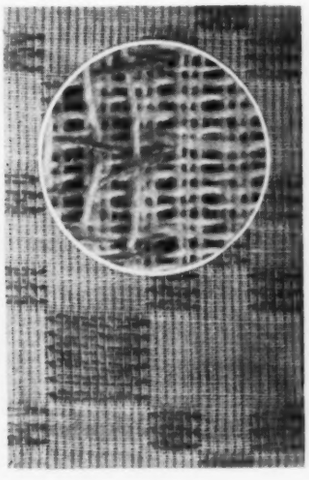


Gray

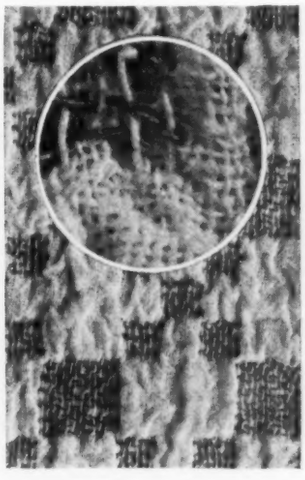


Finished

Filling Crepe (All Z-Twist Crepe Filling Yarn, Ordinary Warp Yarn), 40" Gray, 29" Finished, 56x40, 5.30 yd.



Gray



Finished

Matelasse Crepe (Box-Loom Crepe, Dobby Weave), 45" Gray, 35½" Finished, 84x76, 3.65 yd.

You need a system

to keep down seconds due to bad

Full-Fashioned Match

By Charles O. Simms

THERE will always be a certain percentage (say 2%) of irregulars due to bad match in full-fashioned hosiery, but the real trouble begins when this doubles and, in many cases, triples. The condition is magnified when there are many dozens of a certain style left unfinished and the bad match is not discovered until there is an enormous amount of poor fabric on hand. It is too late to make an improvement and the firm is the victim.

Match can be controlled so that a minimum of seconds is produced—but only by ceaseless, everyday vigilance on the part of fixer, foreman, or someone skilled enough to know what it is all about. The problem should not be left to the knitter, for he is probably more interested in the weekly pay check and should not be permitted to tamper with his machine under any circumstances.

System Found Helpful

The writer devised and used the system described here over a period of months and found it helped tremendously.

The first step is to have a chart squared off in ½-in. blocks. The number of each machine is placed at the left end of each row of blocks and the date is placed at the top. These charts can be made so there is a 30-day check of each legger, since every section must be checked daily.

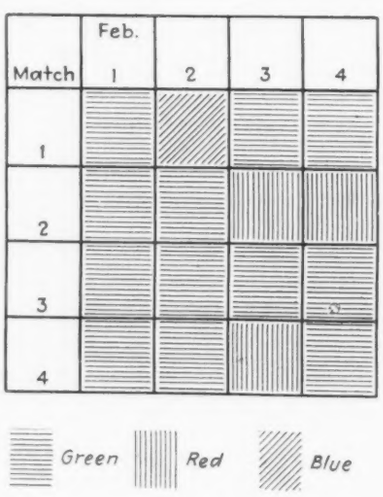
The next requirement is three different colors of crayon pencil—green, blue, and red. If the machine is running correctly as to courses per inch, the block for that day is filled in with green; if the fabric is found to be running tight, red is used; and if there is loose work, the block is marked with blue. A section of the chart on which this type of marking is indicated is shown herewith. The usefulness of this chart can be readily understood when a machine checks red or blue repeatedly. One glance at the chart shows immediately that there is some hidden mechanical trouble. Without the chart, the fixer is likely to forget which machines check off from day to day; and tight and loose legs keep going to the footer, who of course cannot match them.

In our mill this chart brought to light a frozen press shaft on a machine that checked tight over a period of seven days. It showed up three slipping slacker-eccentric balls and several jumping stars that had no locknuts to hold them in a set position. These machines had probably been functioning improperly for some time, with the result that the percentage of bad match was raised. Therefore, the chart was well worth the time and energy devoted to it.

Counting the Courses

As an aid in checking, ordinary blue chalk soaked in needle oil makes a very good line on the fabric when rubbed lightly on the needles. The desired number of courses are run and the work measured from the line to the needles. There is some controversy as to whether 1 in. or 2 in. of fabric should be used as a standard, but the writer has found that there is more chance of 2 in. of work stretching and thus giving misleading results. The machine should be checked within 3 in. after the shadow or sub-welt, and the same amount of weight should be used each time. Between 9 a.m. and 12 noon is an ideal time for this work, and if a machine checks off in the morning it should be rechecked about 4 p.m.

If a section is found to be running tight or loose, the fault should not be remedied until the set is off and the stocking measured and compared with the average. The welt and shadow must be disregarded when measuring total length. The reason for this is that you do not have to match the welt; and this is fortunate, as most welt silk, being a low-twist yarn, does not run even. Measure from the shadow to the lip, for many times a welt cone will run as much as ½ in. longer and, if the main yarn is ¼ in. long, this gives a total of ¾ in. Then, if that head is tightened, the main leg will be too tight, whereas the fault is primarily in the welt. Never sacrifice the right amount of courses in the leg to get length. It means only that there is more bad match to be recorded against the knitting room. If the above stocking should happen to be transferred to a head on the footer that is slightly on the loose side, the condition will be aggravated and there will most certainly be a poorly matched stocking as a result.

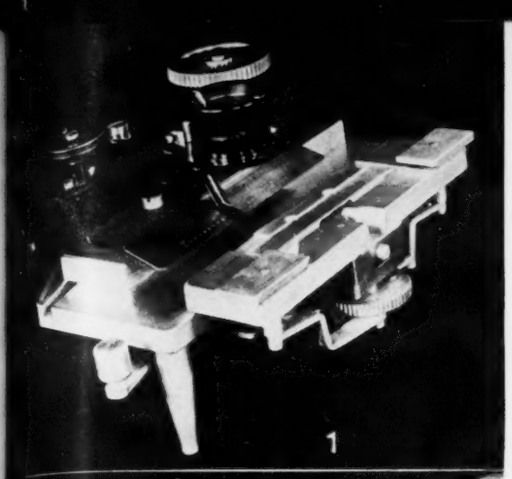


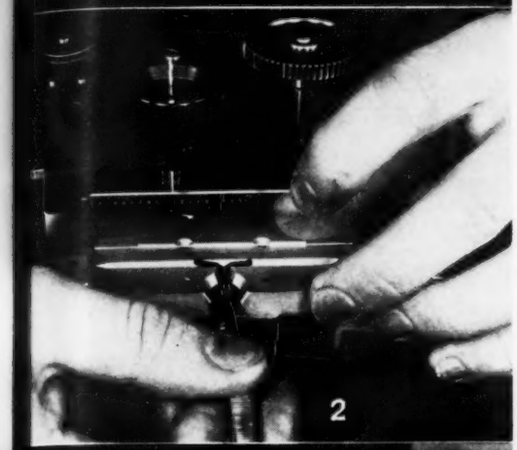
Every knitter should be instructed to report all crooked and irregular heads immediately and should be impressed with the fact that he is responsible for them. This must be enforced rigidly; and, if a knitter is found to be lax, drastic measures must be resorted to. Bear in mind that every tight or loose stocking a knitter runs is without doubt a second; and, if it is graded as a first, it is probably not a quality fabric.

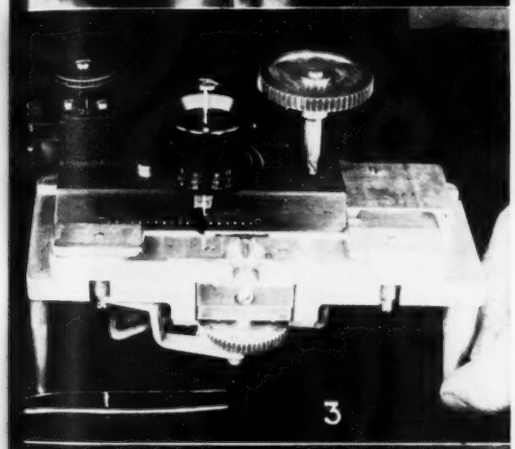
The Washboard of Ringless

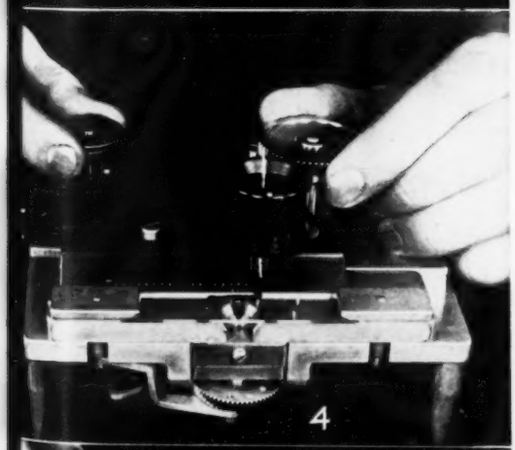
The advent of ringless has brought another factor to contend with, namely, the washboard effect. Knitters should be instructed to take down cones that are causing this defect. This is a rule in most mills but is not enforced to the point where it is of any real benefit to the firm. A washboard leg or foot cannot be matched with an evenly run fabric, and it is better to dispose of these cones than to let the poor merchandise get to the finishing room.

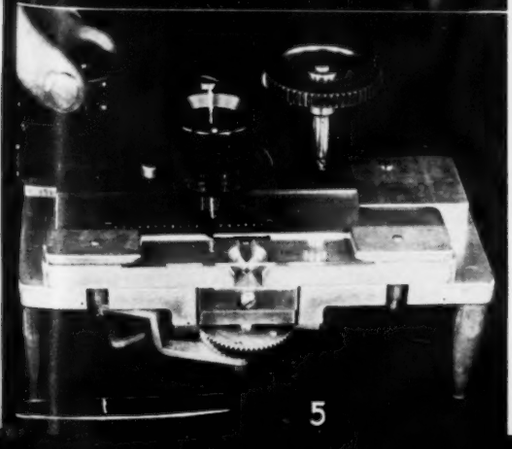
The main thing to bear in mind is the fact that even legs are the biggest necessity and that they can be achieved only by an everyday routine conducted by some responsible party. If this is done, and each footer checked twice a day, matching should be the least of the troubles in the knitting room. On the surface, this system may seem like a lot of trouble; but, once under way, it really consumes very little time. A concerted effort to stop bad match from swelling the number of seconds is worth while.











Tuft Length

Measured accurately with simple device

By G. E. Hopkins and J. N. Dow

Bigelow-Sanford Carpet Co., Inc.

IN STUDYING the quality of pile fabrics, an observer encounters the necessity for several tests which are not required in the consideration of regular flat-weave materials. With pile fabrics, while the density and firmness are partially controlled by the fineness of the weave, the durability and the appearance characteristics are primarily features of the pile construction, rather than of the back construction.

The pile is studied in two ways; first, as the tufts act together to form a general top surface, through a consideration of the appearance of the top, measurements of the total thickness of the fabric, and determinations of density; and, second, as the individual tufts appear by a consideration of the twist of the yarn and the individual tuft length. It has been demonstrated that in studying the length of tufts, many tufts from each fabric must be measured. For accurate measurements, the tuft, from the time it is removed from the fabric to the time it is measured, must be supported in a standard clip to assure that the handling does not change the apparent length by a change in the twist. Furthermore, it must lie straight at the time of measurement.

In order to facilitate this measurement of tuft length so that an operator may make rapid determinations with a minimum personal variation, the technical department of Bigelow-Sanford Carpet Co. has developed a tuft-length measuring device. The following description and the accompanying illustrations will permit any skilled instrument maker to duplicate the device and thus will allow its widespread use at a minimum of expense to those interested in test work.

The measuring portion of the apparatus consists of a modified pick counter, adjustable sideways on a rack and pinion so that its zero point can be aligned with one end of the tuft. The pointer can then be moved across the scale on a second rack and pinion to the other end of the tuft where the scale reading is the tuft length in hundredths of inches. The whole is mounted on a small three-legged metal table, to which the tuft-holding apparatus is also attached.

The tuft-holding mechanism is a flat block having a V slot on its upper surface of proper size to hold any carpet tuft in a straight position without crushing. A standard glass microscope slide is placed on top of the slot after the tuft is inserted, and the tweezers holding the tuft are withdrawn through the groove in the front. The glass slide is held in position while the tuft holder is swung back under the measuring scale with the side lever. At the same time the side blocks, operated by the same lever, slide over the glass, holding it in position. The tuft is thus held during measurement in a straight position under no tension, clearly visible from above through the glass slide.

The validity and duplicability of the measurements were tested by measuring ten tufts ten different times. The operator was allowed to forget previous measurements each time, eliminating any unconscious prejudice from the results. In every case the range was 0.01 in. This is as close as the true end of a tuft can be estimated; reporting the results any closer would be of no significance.

The device has been in operation in connection with quality control for several months. Excellent correlation has been obtained with thickness measurements. Measurements are made easily at 120 per hour and rates as high as 142 per hour have been obtained. These figures include recording of the tuft identification, as well as the measurement.

•

***Fig. 1** shows the holding mechanism moved to the forward position for replacement of the tuft. The lever mechanism has also caused the holding blocks to slide back, releasing the cover glass.*

***Fig. 2** shows the cover glass being raised and the tuft being inserted with a pair of tweezers.*

***Fig. 3** shows the holding mechanism being moved back by operation of the side lever.*

***Fig. 4** shows the pointer being adjusted to the zero line on the scale by means of the knob operated by the right hand. The entire scale and pointer are then moved into alignment with the tuft by the knob which is operated by the left hand.*

***Fig. 5** shows the pointer moved into alignment with the other end of the tuft, at which point the tuft length can be read directly from the scale.*

Apportioning the machinery in a mill producing

Coarse Sheetings

By Gilbert R. Merrill
Lowell Textile Institute

IN THIS ARTICLE, the fourth in the series on machinery calculations, Professor Merrill discusses the amounts of machinery necessary to produce the yarns for the coarse-sheeting organization (10s to 24s) described in the December, 1936, issue of TEXTILE WORLD.

AS a mill making coarse sheetings is likely to have quite a variable demand for the different counts spun, it is not possible to calculate machinery which will always be in balance. The solution given here illustrates what may be done when a given number of spindles is specified and the yarns are desired in some particular proportion. The problem is worked as a general solution which may be applied to any number of counts desired in any particular proportion.

Assuming 10s, 14s, 18s, and 22s are taken as warp counts, and 12s, 16s, 20s, and 24s are taken as filling counts, calculate the necessary spinning and roving spindles for a 20,000-spindle mill on the assumption that *equal weights* of each count are to be spun.

As each count is produced at a different rate, the spindles cannot be divided equally. On the other hand, there is no way of telling the total poundage until the number of spindles making the count is determined. Consequently, it is necessary to start with an assumption. In this case, the assumption is that 100 lb. of each count will be spun to find the percentage of spindles to put on each count. On this basis, it is possible to determine the spindles per 100 lb. of each count and from these figures to find the percentage of spindles for each count.

Figures as determined from tables and assumptions are given in Table I. The first column shows the counts, the second the spindle speed, the third the pounds per spindle for 10 hr., the fourth the spindles necessary to produce 100 lb. in 10 hr., the fifth the percentage of spindles necessary for each count, and the sixth the number of spindles of the 20,000 to use for each count. (Three decimal places are quite unnecessary, but have been used here to make these theoretical figures total exactly 100%.)

The pounds of each yarn produced may be found by multiplying the pounds per spindle (column 3) by the spindles used (column 6). For example, 18s warp would be produced by 2,782 spindles spinning 0.43 lb. per spindle, a total of 1,196 lb. As there are eight lots, the total pounds spun would be 8x1,196 = 9,568 lb. per 10 hours.

In determining the roving spindles to use (Table II), it is first necessary to note that the 24s are spun from 3.30-hank, 22s and 20s from 3.00-hank, 18s and 16s from 2.50-hank, and 14s from 2.25-hank fine roving. The 12s and 10s are from 1.60-hank intermediate roving and do not appear in calculating fine spindles.

Allowing 2% spinning waste in each lot of 1,196 lb. of yarn requires 1,220 lb. of fine roving. It is possible to divide this figure by the pounds per spindle to find the fine spindles needed. Where two yarns are spun from the same roving, merely double the quantity of roving needed.

Three counts of yarn are spun from one intermediate roving in two cases and two counts in the other case. Note that for the last two counts it is necessary to use 1,220 lb., while with the others it is necessary to allow a fine-roving waste. For the fine frame, 1% waste is allowed, making each lot 1,220 ÷ 0.99 = 1,232 lb. As there are three lots of yarn from each of these batches of roving, the final figure is 3 x 1,232 = 3,696 lb.

On the slubber, the counts 14s through 24s are all made from 0.50-hank roving and the 10s and 12s from 0.60-hank roving. Waste on the intermediate is figured at 1%.

TABLE I — Spinning Spindles for Each Count

Counts	*Spindle Speed r.p.m.*	*Lb. per Spindle 10 Hr.*	*Spindles per 100 Lb.*	*Percent of Spindles*	*Spindles out of 20,000*
Warp					
10	7,500	0.89	112.5	6.723	1,345
14	8,250	0.59	169.5	10.139	2,028
18	8,700	0.43	232.6	13.912	2,782
22	9,050	0.33	303.0	18.123	3,625
Filling					
12	6,550	0.73	137.0	8.194	1,639
16	7,150	0.54	185.2	11.077	2,215
20	7,600	0.42	238.1	14.241	2,848
24	8,100	0.34	294.1	17.591	3,518

TABLE II — Fine Spindles. 8x4

Counts Spun	*Hank Roving*	*Lb. Needed*	*Lb. per Spindle*	*Spindles*
24s	3.30	1,220	2.59	471
22s & 20s	3.00	2,440	3.43	712
18s & 16s	2.50	2,440	3.89	627
14s	2.25	1,220	4.48	272

TABLE III — Intermediate Spindles. 10x5

Counts Spun	*Hank Roving*	*Lb. Needed*	*Lb. per Spindle*	*Spindles*
24s, 20s & 20s	1.20	3,696	9.11	406
18s, 16s & 14s	1.00	3,696	11.38	325
12s & 10s	1.60	2,440	6.21	392

TABLE IV — Slubber Spindles. 12x6

Counts Spun	*Hank Roving*	*Lbs. Needed*	*Lb. per Spindle*	*Spindles*
24s through 14s	0.50	7,466	24.00	311
12s & 10s	0.60	2,465	19.25	128

Go-to-Meetin' Section

TWO TYPES of textile progress were on display last month. One was the improvement in mechanical equipment, accessories and supplies used in textile manufacture, as portrayed at the Southern Textile Exposition and the Knitting Arts Exhibition. The other was the advance in industry thinking as demonstrated at the conventions held in connection with those shows. Both accomplishments are high-lighted in the special section starting on this page. An index to the six articles included will be found below.

ROVING LED THE PARADE

Of new and improved processes and equipment demonstrated at Greenville's twelfth show

THE most outstanding of many outstanding features of the twelfth Southern Textile Exposition, held in Textile Hall, Greenville, S. C., April 5 to 10, were the six long-draft roving systems turning out in one or two operations high-quality roving ready for spinning. But advances made in other processes likewise demanded close attention—weaving, for an outstanding example, which all but completely stole the show two years ago and which here gave evidence that the high speeds then attained were not the ultimate. In this article we report, as usual, the strictly new production equipment seen at Greenville.

Carding Equipment

For the picker house were demonstrated an ingenious new lap-analyzing machine designed to tear a lap apart yard by yard, weighing each yard and permitting its inspection by means of transmitted light, and a new cotton-lap scale of more familiar type equipped with a 52½-lb. chart graduated to 1 oz. A traverse-roll grinder for card cylinders was shown with a larger shell, thicker wall, and heavy traverse screw.

We described in considerable detail five of the new long-draft roving systems in our March pre-show issue (pages 106 to 109). The system which we did not then describe, and which must still be considered in an experimental stage, is of a simpler character than the one previously offered by the same concern. Like some of the other systems, it involves two drafting elements consisting of two pairs of rolls each, with a special self-threading condenser guide or trumpet located between the elements. This trumpet is so shaped, with a pin in the middle bent parallel to the movement of the stock, as to make the roving take on a tubular form, open only underneath, where the pin is mounted on the guide. This arrangement renders the edges of the roving round and relatively thick, while the center is thin—the theory being that in effect this provides a double roving, which is more readily controllable in the drafting without selvage trouble. Of additional interest on this frame is a new system of weighting which permits all weight on any set of top rolls to be removed or applied at the flick of a lever, and which tends to promote trouble-free operation. The machine operates as a slubber and is capable of drafts up to at least 40.

Spinning and Throwing

A new doubler-twister was seen taking yarn over-end from double-headed throwing bobbins, doubling it on a large feed roll, inserting some 15 turns per inch by means of the ring and traveler principle, and winding the twisted yarn onto a special long and narrow cone ready for knitting. A large-package doubler-twister of standard design was equipped with a new sheave-shaped corrugated feed roll which insures against yarn slippage.

Among new spinning auxiliaries a device for maintaining constant tension on tapes embodies a moment arm designed with mathematical precision to be always in constant relation to the arm holding the idler pulley, no matter what the angle. A new lacer is designed to lace tapes by means of a flexible metallic joint.

One roll - covering manufacturer showed a synthetic-rubber covering with a reinforced lining, along with a new automatic-traverse, one-man-operated, buffing machine for all types of coverings; a seamless lining for both synthetic and cork cots; a new-type cork-covered paper cone to replace wood cones, and a line of roving cans made of chemically-treated laminated paper. Another cork manufacturer exhibited new cots made from synthetic rubber-

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like materials and cots made from combinations of such material and cork. Rubber-like temple rolls and cellulose-acetate comber rolls were on display.

Auxiliary equipment included large-package, light-weight, enamel-impregnated bobbins with embossed surface, improved hardened-steel yarn guides, silk steaming spools with extra-hard stainless-steel heads, and an upstroke-twister cradle which places the receiving bobbin farther forward to give even tension and eliminate guide wear.

Winding and Warping

On two of the cone winders demonstrated was a new arrangement of the combination slub catcher, the comb or needle unit being placed ahead of the straight-blade unit instead of behind it, where it formerly allowed accumulations of lint to slip off and get into the yarn. Both of these cone or tube winders were equipped with an automatic "sizing" mechanism which stops the spindle when the receiving package contains a predetermined amount, this feature being particularly advantageous in the case of dye packages. The cotton coner of the grooved-traverse-roll type is now equipped with a finger which can stop the yarn traverse at any crossing point of the groove, thereby permitting packages of various lengths to be wound; and the present bail on this machine is self-threading. A waxing device for application to machines winding colored yarn has a projection on the disk which prevents any spinning of the wax at high-speed operation. The circulating-spindle winder, equipped at the last show for tying weaver's knots, was shown equipped for tying so-called fisherman's knots.

As usual, a large automatic spooler was on exhibition, and cheeses from it were shown mounted for over-end delivery in a new creel for cotton twisters. It was shown that the beam warper which draws yarn from cheeses can, in a new model, be converted to a ball warper for wide packages; and it was announced that another warper for short balls and one for dye beams are available.

The warp-tying-in machine which ties from a flat sheet has been redesigned to weigh only 315 lb., one-half the former weight. A special beam frame has been constructed for use with tying-in machines that tie from an end-and-end lease, when such machines, used primarily for rayon, are to be employed away from the loom. A third warp-tying-in machine demonstrated is adaptable to tying either from a flat sheet of cotton yarn or from an end-and-end lease of rayon yarn.

In a new yarn-conditioning machine, the apron consists of ribbed aluminum slats placed close together and is inclined at such an angle that the bobbins continually roll over as they proceed through the machine, thereby exposing all surfaces to the four spray nozzles located above. An extractor-type conditioner for large packages, now equipped with simplified and individual control for each package, was demonstrated with a variable-speed drive which makes the machine adaptable to a wide range of yarns.

One of the most ingenious devices in the show was a new leasing arrangement to be applied to the handling of rayon warps on cotton slashers, this involving primarily a hook reed to be installed in back of the slasher drum and to be operated by a hand wheel, the operation requiring only 2 to 3 min. A new slasher roll is constructed with a welded covering of 16-gage Monel metal on seamless steel.

Weaving Equipment

At two places in the exhibition the latest model of single-shuttle cotton loom was shown in operation beside its predecessor. The object of one of these demonstrations was to show how, to both looms, can be applied the new flywheel-pulley or "energy" drive, which is designed to counteract the irregularities in power load caused by the picking cycle and so to permit higher loom production and better quality.

The other demonstration was intended to show how much better the new loom will operate at 202 picks per minute than the old one at 160. Recent improvements on the latest model include a method of stopping the shuttle just short of the picker by means of tapered leathers which extend from each side of the box and catch the shoulders of the shuttle, thereby insuring a positive positioning and facilitating accurate transfer. Additional improvements on this loom include a leather-coil bumper located below the shuttle box, where it strains the stick less, and a larger crank arm equipped with a sturdy spring to take the strain at bang-off.

Other improvements in the single-shuttle looms included a scale and pointer applied to the constant-warp-tension friction let-off on the rayon dobby model to show the fixer when a resetting is necessary. On a similar loom, equipped with a cam harness motion, a new design of cam in combination with an improved narrow-gage spring top operates the harnesses as smoothly as a dobby. A 90-in. broad-sheeting loom was shown equipped with a more accurate pick motion.

Among the multi-shuttle looms, all operating at high speed, was shown a shuttle-changing silk-and-rayon under-cam model specifically designed for weaving with the new flat quills, which permit twice as many looms per battery hand and reduce by half the danger of bad joinings.

Also of interest was an upholstery and drapery loom which can be converted in 15 to 30 min. from a 4x1-box automatic to a 4x4-box pick-and-pick, and vice versa. Once the box is changed, the magazine, which is pivoted, can be swung in or out of operating position simply and quickly. A new dobby, shown in operation on a huck-towel loom, has hardened-steel drop-forged jack backs and hooks with one-third more bearing area than formerly. A 98-in. bedspread loom, constructed of machined steel where wood was used before, was shown operating at 121 picks per minute and 90% efficiency—20% faster than previously possible. Other examples of high speed were 162 picks per minute on a 40-in. terry-towel loom, likewise 162 picks on a 46-in. cotton-suiting loom, and 182 picks on the huck-towel loom.

Among the new loom parts exhibited was a spring-top harness motion which does away with all sheaves and some of the strapping, hooks, and wires to insure an even lift and even pull on each end of the harness. There was also an ingenious shock absorber for swinging-reed holders which effects an elastic placement of the pick and a shockless beat-up.

Evidence of the flat-quill development could be seen among the loom accessories. For example, one of the newest shuttles for flat-quill weaving is equipped with an expanding ear clip, which fastens on the base of the bobbin when the spindle is pushed down and eliminates the damaging of bobbins when they are pushed into tight clips. An improved grip on flat bobbins is provided in another shuttle by means of a two-ring clip and a spindle. A new double-end picker for use with flat-bobbin shuttles in cases where the picker stick is not in the center of the box is built up with three plies on one side and one on the other.

The life of a pitch-band reed has been increased by the application of a copped-steel covering machined over it, in place of the usual paper. Demonstrated by a company specializing in pick counters were new third-shift hank and yardage counters. Shuttle eyes designed for easier threading and longer life were shown. Among the many pickers, bumpers, lug straps, and similar accessories were a number of new designs, including a magazine-type bumper embodying a piece of leather so inserted as to act as a spring, a leather picker-stick bumper which fits into the lay of single-shuttle looms, a synthetic rubber loop picker with fully molded face having no trim to catch the filling, synthetic rubber reversible picker bumpers, and a synthetic rubber and fabric lug strap in the manufacture of which the plies are built up around a form to insure equal stresses.

Cloth Room; Finishing

From the viewpoint of visitors to the exposition interested in bleaching, dyeing, and finishing, the most striking aspect was the widespread use of cor-

Second floor of Textile Hall, Greenville, S. C., during twelfth Southern Textile Exposition

rosion-resisting metals and alloys in the construction of equipment used in those processes. A piece dyeing machine in this class, which is of stainless steel construction, has a special paddle-type reel with spacer sheets between the ribs and the center shaft to prevent catching of the goods, and other features designed to reduce dyeing time and improve quality. A package dyeing machine, also of stainless steel construction, embodies a new system of circulation designed to increase the flow of liquor and thus promote uniform dyeing.

Another company showed a package dyeing machine of Inconel-clad construction developed particularly for use with sulphur and developed colors. This manufacturer featured also an improved Monel-metal perforated dye beam with heads and spacer rings of a special nickel alloy. Bleachers of cotton piece goods were interested in a 1-ton stainless-steel kier which is to be installed in a southern finishing plant for experimental work. Dry cans of advanced design were featured in at least five exhibits—two manufacturers showing stainless steel cans; one, a Monel-metal can; another, a chromium-plated can; and still another, a set of cans equipped with self-aligning packless roller bearings and individual traps on each cylinder. Also built of corrosion-resisting metals was a new 50-in. jig with stainless-steel dye tub and immersion rollers.

Improvements in a hydro-extractor include welded steel casing to give added strength, basket and bearing assembly suspended by steel chain links, single-point bearing lubrication, and elimination of clutch drive. Displayed for the first time was a new automatic cloth guider of the solenoid type designed to give a quicker response than the motor-operated guider previously offered by that company. The ingenious device for removing bowed filling from cotton cloth during the tentering process, which was described in our April issue, was demonstrated. For producing a clear, saturated solution of brine for dyehouse and other uses, a new percolating salt dissolver was shown.

Incorporated in an automatic shear first introduced two years ago are a new and simpler vibrator motion and a new guide. An automatic folding machine of the same make has a new stop motion which operates even on butted seams and which stops the folder blades at start of their backstroke.

New sewing machines included a butted seamer with special attachment for multiple stitching of the selvages to prevent turned selvages during processing of the fabric: high-speed machines for overedging, and for overseaming, both operating at 4,500 stitches per minute; a high-speed, combination-feed lockstitch machine equipped with ball bearings on the shaft as well as in the head and operating at 3,500 stitches per minute; a high-speed, single-needle lockstitch machine with additional pressure lubrication for the gears and operating at 4,000 stitches per minute or better; an improved feed-off-the-arm machine and its companion two-needle, change-bits chainstitch flat-bed machine, both with the latest automatic oiling devices.

Chemicals

Among the new chemical specialties featured were a desizing compound for removing gelatin, starch, and other protein sizes; another desizing compound for removing starch and dextrin sizes; several new sizing compounds for cotton and rayon, including one for acetate yarns; a series of soaking agents designed to give controlled pebble in rayon crepe; two softeners for use on goods which are to be Sanforized; a wetting agent particularly recommended for treating piece goods previous to kier boiling, bleaching, Sanforizing, and in peroxide bleaching; a fiber lubricant designed to replace olive oil for treating wool; a chemical for use in conjunction with air-conditioning systems designed to prevent slime growth on surfaces in equipment which are constantly in contact with water, and prevent contamination of conditioned air by dust, bacteria, and fungus growths; and a new sanitation chemical for use in mills and mill villages.

Several improved scales for weighing and printing the amount were exhibited. Improved wire-tying machines for bales and boxes eliminate irregularity. Among the office equipment were a new electrically operated calculator turning up 1,200 figures a minute; an automatic check-writing machine; and a new posting machine for payroll records which provides all data required for making reports under the Social Security Act.

SINCE LAST YEAR

Many changes have been made in knitting and related equipment, Philadelphia Show discloses

THE famously impressive Knitting Arts Exhibition, held annually at Commercial Museum, Philadelphia, proved larger and livelier than ever on its 33rd opening, April 19. Quite as usual, however, it contained a progress-marking display of improved throwing machines, winders, knitting machines, sewing machines, finishing machines, accessories, and supplies. In this article we review briefly the improvements made in such equipment since the 1936 performance.

Outerwear Machinery

In the unusually large display of new outerwear equipment were two body machines producing loop or terry-like fabrics in block or plaid designs by means of high and low loop-forming sinkers selected automatically. The spring-needle rib body machine was shown equipped with new pattern wheels for producing fancy welt or raised stitches on bathing-suit material, an ingenious spring mounting for these wheels permitting them to swing outward when they encounter jammed jacks or other obstructions or when 1x1 rib is wanted. Belt drive has been incorporated in a sensitive and efficient new take-up on a pattern-rib bathing-suit machine of the latch-needle type. Rotary jacquard patterning can now be applied at any point on another rib body machine equipped with a short-chain system and with a starting cam controlling each feed independently. A new yarn-changing striper applied to leaded spring-needle machines is designed for trouble-free operation.

Among the flat machines, which are of course primarily outerwear machines, the multi-racking jacquard type, which knits three fabrics of different design side by side simultaneously, can now produce raised-stitch effects and also lace effects by transferring loops. The knitting of 42 courses per minute with only 21 traverses of the carriage, and also the production of raised-stitch effects, are possible on a new double-lock links-and-links machine which is so designed that the two knitting elements in the carriage work independently of each other and do not restrict jacquard selection. Another links-and-links machine was shown with nine-fold selective automatic rack; and a two-bed rib-type flat machine boasted high speed, automatic racking of rear needle bed up to six needles by one needle at once or two needles at once, and facilities for quick change of gage.

Underwear Machinery

Of particular interest among the new machines designed primarily for underwear was a multiple-feed (16 feeds on 14-in. cylinder, for example) rib body machine with yarn carriers which swing out from the needles to facilitate threading, with a sensitive and non-jerking belt-driven take-up, with a swingable cloth-roll support which makes possible slipping off the finished roll without removing rod or tube, and with a magazine-creel type of bobbin stand. A so-called scarf or jersey-stitch machine, with wheels and tuck bars on all feeds, was equipped with new sections which can be changed from lay-in to regular work, or vice versa, in a quarter of the time formerly required. A new revolving-cylinder sinker-top girdle machine has provision for throwing the elastic yarn in and out of action when changing automatically from design to plain and vice versa. To the back of another pattern-wheel girdle machine has been applied a small individual furnishing wheel for running elastic yarn. The double-butt tuck rib body machine has been equipped with a new cam ring which permits knitting vertical float stripes.

Also in the classification of underwear machines was a tricot knitter imported from Germany and running 75-denier rayon at 310 racks per minute.

An electric stop motion for circular machines has been improved by the application of detectors to the top of the head in addition to those at the spider and by the adoption of a compact, all-inclosed, dirt-proof tripper.

Hosiery Machinery

This show registered only the following improvements in half-hose machines: application of a striping attachment to the automatic panel-wrap machine, addition of mock wrap to automatic needle-reverse-plating, and increasing of sinker-reverse-plating to 25 steps with no increase in the space required over 12 steps. Also shown were English-rib machines built in this country—stronger and more accessible than those imported.

The only complete full-fashioned hosiery machines in the show were the single-head type, which has now been standardized to produce single-unit stockings by holding the instep stitches in a pivoted transfer bar while the heel tabs are knitted, the tabs then being topped on the needles. The leading American builder of full-fashioned machines staged an "open house" at its Pennsylvania plant, where visitors could inspect the latest improvements, including an examining form divided lengthwise to expand the stocking from toe to welt in proportion to the width of fabric. One of the importers of German machinery showed the split needle bar for single-unit stockings divided into sections to permit altering the width of instep. Redesign of the flexible carriers, with elimination of the top tube, increases the range of yarn sizes which can be handled and facilitates the removal of knots. Improved stop motions, friction clamps, and other parts were shown.

New developments in small ribbers included a two-feed revolving-cylinder-and-dial (for high speed) type equipped with two five-color knot tyers, provision for twenty steps of jacquard-type patterning, and arrangement for laying in elastic yarn every other course. A new 2x1 welt ribber racks to line the needles up for the production of smooth selvages. A four-feed ribber for men's anklets, capable of a production of at least 10 doz. pairs per hour and laying in elastic yarn on every fourth course, is designed for special half and whole loose courses and permits the same transferring as on a two-feed machine. Another four-feed ribber, with welt and loose course, selvage welt, rubber lay-in, and two speeds, is arranged to throw three feeds out of action simultaneously when going through the welt and loose course, thereby providing a single-feed welt and loose course with high production.

Yarn Machinery

The doubler-twister which was producing a new type of knitting package at the Greenville show was exhibited equipped with the new corrugated sheave-type of feed roll. This type of roll was also demonstrated on another doubler-twister, which was winding 1-lb. packages at 10,000 r.p.m. In the booth with the latter machine was shown a redraw frame with an ingenious graduated-tension device which automatically applies a leather-band brake to the tension shaft when the yarn runs slack

A glimpse of the Knitting Arts Exhibition in Philadelphia, April 19 to 23

and removes it when the yarn tightens, permitting a speed of 2,400 r.p.m.—plus an automatic measuring device which stops the receiving bobbin when it reaches a predetermined size.

Several important improvements in a precision cone winder for rayon and silk were shown: pressure-lubricated pulleys, wick-fed oil-holding bushings for spindle bearings, longer starting handle to provide better leverage and control, sensitive sizing mechanism with double adjustment, and easily adjusted quick-acting stopping-lever assembly automatically oiled. A new cup-build attachment for bottle-bobbin winders rides in with the yarn to provide a close wind. The rearrangement of the combination slub catcher for cotton coners and one of the new sizing devices shown at Greenville were again demonstrated.

A redesign of twist setter involves a conditioning chamber constructed of stainless steel over welded steel frame, insulated with an asbestos and Portland cement board.

Sewing Machines

Foremost among the sewing machines exhibited for the first time was a high-speed seamer for full-fashioned hosiery, embodying, among other advances, a positive overhead drive with both feed-cups suspended from above, mechanism completely sealed in a housing and so designed as to be self-balancing and thus to give vibrationless operation, positive lubrication, speeds 40% higher than previous models, and means for adapting the machine to produce the increasingly popular three-thread seams.

One manufacturer featured a two-needle, high-speed, lockstitch model with the feed in the bed of the machine to give uniform stitches at all speeds up to 4,000 stitches per minute, adjustable feed eccentric allowing micrometric adjustments of stitch lengths, and design which permits all parts to be lubricated without turning the bed on the hinges. The same manufacturer showed two buttonhole machines—one fitted with a top-cording device, positive gear feed to give equal distribution of stitches around the buttonhole, and special stop motion of the two-to-one type; and the other with a positive take-up for both needle and underthread and an improved thread and cord trimmer which trims both close to the last stitch without danger of cutting the material. A third buttonhole machine, of different make, also is designed to trim the cord and thread close to the fabric and embodies an adjustable tack control which allows the operator to change to any length of cut desired in about 30 sec. Still another sewing-machine manufacturer featured improved equipment for sewing rubber on knit goods and a split-tubing machine, both of which have a depressed floating mounting to eliminate noise and vibration and permit higher speeds; and a high-speed seam-covering machine for bathing suits with all inclosed parts running in oil. Other improved equipment included high-speed overseaming and overedging machines with speeds up to 4,500 stitches per minute. The latest development in sewing-machine tables was one equipped with a combination air-cooled motor and electric clutch designed to give instantaneous starting and stopping and with lighting obtained direct from the motor.

Finishing Equipment

In addition to the package-dyeing machine and the piece-goods dyeing machine described in our report of the Greenville Show, there were featured several new types of equipment of interest to dyers and finishers of hosiery and other knit goods. Among these were a high-speed hydro-extractor of the self-balancing type and requiring no pit for installation and an improved extractor with automatic timer which actuates the brake and stops the machine after any predetermined time. The manufacturer of a well-known automatic hosiery boarding machine introduced a two-operator half-hose boarding machine of similar design, having a capacity of 52 doz. per hr. and capable of finishing half hose weighing up to 5 lb. per doz. This machine, as well as the one for women's hosiery, is equipped with an up-to-date conditioning box to take out dry spots, green boards to eliminate glare, and seats for

the operators. Also new was a steam-swivel hosiery drying form, which embodies a patented steam-pipe coupling in place of the rubber tubing formerly employed.

A redesigned automatic length-cutting, counting, and laying-up machine is suitable for cutting both knit goods and woven fabrics into lengths from ½ in. up at a speed of better than 2 doz. per min., laying up the cut lengths in dozens or units of any other desired denomination on a canvas blanket which moves on as soon as a unit has been completed. Improvements in a steaming and tentering machine for flat- and circular-knit fabrics include a 66-in. chain-type tenter in place of the 24-in. tenter formerly used and an arrangement for blowing heated air instead of cold air for drying the goods after steaming and before rolling up. New this year was a hand-operated inspecting and cutting machine designed particularly for handling tuck-stitch, form-fitting knit goods to any desired length, but suitable also for use with other fabrics which must be hand cut. Four differently shaped polo-shirt pockets or other knit-garment shaped parts can be handled simultaneously on a new electrically heated creasing machine. Developed particularly for tying hosiery—but suitable also for tying skeins, towels, etc.—is a machine which compresses the hosiery package, makes a double tie at the same time, and is said to permit one operator to accomplish as much work as formerly required four girls.

New chemicals developed since last year's show include a compound for taking the place of glycerin in printing, warp-sizing, and silk soaking; a line of synthetic resins for use in producing permanent finishes on various types of fabrics; a compound recommended particularly for eliminating crease marks in pile fabrics, but suitable also for use in finishing other types of materials; specialties for use in finishing sheer hosiery; and a finishing and weighting oil for knit goods.

Accessory Equipment

Among the newest types of accessory equipment were included an all-metal knitter's bench with five compartments, two lock drawers, and three individual humidor cabinets providing storage for 81 4-in. cones; a steel work box for use with seaming, looping, and packing tables; and a chain plier especially designed for use by knitters. A burnisher for needles, sinkers, dividers, etc., subjects the parts to the action of loose shot in a revolving keg. A number of new designs of latch needle were exhibited.

One of the most interesting exhibits was a complete testing laboratory developed for installation in stores and textile mills. The designer of this featured a new testing device developed for determining the pliability of yarns.

ENGINEERS SAW

Much New Equipment of

at Greenville and Philade

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At both the Greenville and Philadelphia Shows many of the exhibitors featured recent advances in power transmission, lighting, humidification, and other equipment of special interest to plant engineers and master mechanics. This was particularly true at the Southern Textile Exposition, where a large percentage of the exhibits had to do with the engineering phases of textile manufacture. In 1935 many of the exhibitors introduced engineering equipment of radically new design. This year again some entirely new types were featured, especially in the case of motors, lighting units and control instruments. For the most part, however, the emphasis was placed on improvements and refinements made since the last exposition. In the following report of new engineering developments, descriptions refer to products shown at Greenville, unless it is stated that they were displayed at the Knitting Arts Exposition.

DRIVES—Two years ago several new types of spinning-frame drives of the variable-speed, V-belt type were introduced. This year improved models of simpler and more compact design were shown. An improvement noted in one drive of this type was a new base which moves in such a way as to compensate for changes in center distance and thus prevent loose belts. A new application of the multi-V-belt drive was its use on a rubber-covering machine.

For use with chain drives on spinning frames, two manufacturers featured new chain casings, both of which are designed to give automatic lubrication of the chain and to prevent leakage of the lubricant. Other new power-transmission equipment included a motorized variable-speed unit; and two worm-gear speed reducers.

BEARINGS—Anti-friction bearings were featured by half a dozen or more exhibitors. Most recent developments included a sealed bearing for twister top rolls, designed to eliminate leakage and splashing of the lubricant; a conveyor bearing assembly, lubricated for life; hanger boxes with special grease traps; solid roller and helically wound roller bearings especially designed for looms and spinning frames; cartridge-type completed sealed bearings; pillow blocks; and self-aligning adapter bearings.

MOTORS—Operating in a large glass case with two streams of water playing on it in such a manner that it was being constantly sprayed from several directions, was a splash-proof motor particularly adapted to finishing-plant operations. Shown for the first time was a loom motor with switch box cast as an integral part of the base. Featured also were a new self-cleaning motor for spinning frame service and an improved lint-free-type motor. Another new self-cleaning motor, designed especially for textile mill use, is of the squirrel-cage induction type and has all working parts dust-sealed.

Other exhibits of electrical devices included latest developments in arc welding (shown also at Philadelphia); new line-starter combinations featuring the fuseless switch; new protective devices, safety switches, and compact controls for individual drives; and a completely automatic range control for finishing plants, which regulates and synchronizes the speed of the cloth through the various processes.

One electrical contractor stressed a trouble-proof method of procedure with attention to details, such as leather bushings at the junction-box connection to prevent chafing of the insulation. Another had a new line of narrow-type lighting panels designed to fit against the side on an 8-in. column; also loom-switch pedestals equipped with individual test blocks.

HUMIDIFICATION—In the field of humidification and ventilation, an improved trunk-type conditioner, which is designed to screen, condition, and heat recirculated air, has been equipped with instruments to give automatic control and to provide a continuous record of the performance of the unit. Other new developments in this line included exhaust fans for either horizontal or vertical mountings; grills for ventilators with bars so shaped that the draft is diffused, thus preventing air pockets and stratification; a combination humidity, temperature, and draft controller; and a very sensitive controller of the same type for use, mainly, in the laboratory and office.

LIGHTING—New developments in lighting and fixtures included a dust-tight

Special Interest

lphia Shows

fixture developed recently to meet the requirements of the National Electric Code for use in hazardous locations. For cloth inspection purposes, there was shown a fixture which can be suspended at any height desired or built flush with a drop ceiling; this fixture carries a 400-watt incandescent lamp behind an opal-glass diffuser. An alternate arrangement makes use of daylight blue lamps. Shown for the first time was a new 200-watt individual-loom lighting fixture, which, when mounted about 10 ft. above the floor, concentrates the light on the working surface, with just sufficient diffusion to flood the entire loom. Color-correction units and combinations of various types using the high-intensity mercury-vapor lamp with incandescent lamps were featured by two manufacturers. One company introduced an inductively ballasted mercury-vapor lamp with higher efficiency and practically instantaneous starting characteristics; this unit was shown also at Philadelphia. The same company demonstrated a novel system of fabric identification in which an indelible mark, invisible under ordinary light, becomes visible under ultra-violet rays. Also exhibited was a new color-matching unit for dyehouse work.

CONTROL INSTRUMENTS—At Greenville several instrument manufacturers featured the latest developments in recorders and controllers for use in warp sizing and finishing processes and in the power plant. Among the instruments exhibited, two were for controlling the moisture content of sized yarn as it leaves the slasher. One of these was described at length in our March issue. The other consists of three major units—a hygrometer which is sensitive to moisture changes in the yarn and which is placed just above the warp as it leaves the last drying cylinder; an electrical measuring and controlling element which controls a valve in the steam line to the slasher to maintain a uniform, predetermined moisture content in the yarn; and a moisture recorder which can make records for four separate slashers. In addition to showing a new, low-range draft and pressure recorder and controller, a line of instruments for the remote measurement and control of various conditions, and a wide-strip pyrometer, one company demonstrated a system whereby such factors as operation of valves, pumps, etc., and temperature, pressure, liquid level, speed, and other variables are coordinated and controlled according to a predetermined schedule. Also new were an air-operated controller of the indicating type for processes where close throttling is needed, but a record is not essential; and an inexpensive temperature controller applicable to processes where close control is unnecessary. For use in the boiler plant, there was exhibited at both shows a new portable CO_2 recorder which weighs only 30 lb. One company demonstrated a completely automatic system for maintaining proper water levels in the boiler; this system starts and stops the pump, sounds alarms, cuts out stoker or oil burner, and flashes signals to a remote-control station.

VALVES AND TRAPS—Recently introduced to the textile industry was a line of lubricated plug valves having standard gate-valve face-to-face dimensions and recommended particularly for handling chemicals. Also shown were diaphragm valves designed to give a uniform, controlled flow; and non-metallic disk valves. One manufacturer featured a submerged bucket type steam trap, especially suitable for finishing plants. Stainless steel disks and rings characterized the valves of another manufacturer, who featured also a line of valves for welded joints. Still another exhibitor showed an interesting detail in a malleable iron, non-heat handwheel for all globe and gate valves, with wheel-plate designating type, number, and service for which recommended. Other types of new mill-engineering equipment included a bucket trap for applications wherever intermittent removal of condensate at steam temperature is desirable; an automatic scraper-strainer for use in steam and liquid pipe lines to remove grit and other impurities; a hot and cold water blender; and improved rotary pressure joints for use on slashers, dry cans, etc.

MISCELLANEOUS DEVICES—For the machine shop and for general mill use, one manufacturer displayed a portable type pipe threader with roller cut-off, and an inclosed-gear stationary type threader; another featured a new long-grip extractor for removing broken bolts, studs, screws, or pipe ends. Maintenance equipment included an automatic scrubber operated by one person, which does a combined job of cleaning and drying in one operation. A line of cement and asbestos pipe designed to resist soil corrosion, tuberculation, electrolysis, etc., was shown, along with shingles made of cement and asbestos. Also featured were copper shingles and a light-weight copper sheet for weather-proofing walls and roofs. One manufacturer demonstrated a special brush for cleaning long-draft rolls.

New this year was a high-speed, blower-type, automatic traveling cleaner mounted on a continuous overhead track, traveling at the rate of 150 ft. per min., and designed to clean both the spinning frame and ceiling. Featured by one exhibitor was an improved system for oiling cotton in the picker. Several methods of installing an improved stoker of the industrial type were demonstrated by one manufacturer. At Philadelphia there were exhibited an improved Zeolite water softener with gravel-retaining screen; and a constant-oil-level control for application to oil-ring and anti-friction bearings.

Several of the newer applications of corrosion-resisting metals and alloys were noted in the descriptions of productive equipment at Greenville and Philadelphia. Other recent developments in the use of these materials featured at one or both shows include Monel metal shuttle tips and heddle eyes, and stainless steel cloth expanders and tenter-clips.

Fire protection, depreciation, spindle shrinkage and other subjects discussed at Greenville

A.S.M.E. MEETING

ONE of the high spots of Exposition Week in Greenville was the meeting of the Textile Division of the American Society of Mechanical Engineers, held April 7, at Poinsett Hotel. A number of particularly interesting papers covering a wide range of subjects were presented at the technical session on Wednesday morning and at the dinner meeting in the evening.

The morning session was called by Ralph S. Pruitt, chairman of the Greenville Section, A.S.M.E., who presented John A. McPherson, vice-president and chief engineer of J. E. Sirrine & Co., Greenville, S. C. Mr. McPherson had charge of the technical discussion.

Fire Protection

The first speaker, Asa Hosmer, southern field manager, Factory Insurance Association, Charlotte, N. C., discussed fire protection in southern textile plants. Mr. Hosmer stated that fire insurance on manufacturing plants today carries with it side-line, or supplemental coverages. The most important of these are sprinkler leakage, and windstorm insurance. Sprinkler leakage is the premature operation of sprinklers caused by accident or by heat other than from fire, also the precipitation of water from accidentally broken sprinkler pipes, or heads, or from the collapsing of tanks. Windstorm insurance gives protection against the straight velocity wind, or hurricane, and the twister, or tornado, which causes its initial damage by the expansion of air inside a building when the low-pressure area passes over and near it. Most buildings are designed to withstand a certain direct wind pressure, but few are designed to resist the internal forces of the twister. Wall and column anchors, parapet walls, and other details should be studied with this in view.

The general principles of fire protection as applied to textile plants are well understood. They cover such items as heavy construction, segregation of hazards by fire walls, complete sprinkler systems backed by adequate water supplies. With the trend toward larger areas and fewer fire cut-offs, water supplies, both primary and secondary, should be proportionally increased.

Modernization of existing plants, with the resulting rearrangements of equipment and consolidation of processes, is giving the insurance companies concern. Experience has taught that there are certain inherent hazards in processing cotton that have to be isolated so that a fire originating in one process will not spread to the entire plant. These processes are placed in separate cut-off areas. But present-day practices are getting away from these fundamentals. There have been changes in machinery, in the arrangement of machinery and processes. Mills have introduced materials-handling, and labor-saving devices in many places, and all these have affected the original fire risk. The insurance company looks at the mill with the view of minimizing the fire risk; the owner, with the view of securing smooth and economical production. There must be some happy medium between the ideal production arrangement from a production point only and the ideal arrangement from the fire protection point only, which will result in a satisfactory arrangement to the mill owner and a safe arrangement to the insurance companies.

The picker room, particularly in the multi-story mill, brings up probably the hardest problem. Provision should be made for fire cut-offs, waterproof floors, and individual valves to shut off the sprinklers as soon as flash fire is extinguished. Dust pipes should be of spiral-riveted steel.

Another problem is the warehouse. The standard warehouse for years has been a one-story building, constructed in multiples of 50x100-ft. sections. The divisional walls were brick fire walls, end walls of light frame construction, and roofs of standard plank and timber design. The compartments were fully protected by sprinklers, and cotton bales were stored one on end. It is unfortunate that the tendency today seems to be for bigger areas in warehouses and higher buildings in which cotton bales can be piled, rather than stored one on end. Where steel columns are used in buildings of this type they should be protected with concrete.

Humphrey Pump

The accomplishments and possibilities of the Humphrey Pump were outlined by W. M. Simpson, of Clemson College, Clemson, S. C., student member A.S.M.E. This pump was developed, in England, in 1909, by H. A. Humphrey. Projects which might use this type of pump to advantage are: (1) water supply of large industrial plants, (2) municipal water works, (3) hydraulic mining, (4) irrigation and drainage work, (5) hydraulic air compressor, (6) hydro-electric power from pump storage.

Some of the problems of the cotton mill in making use of cut rayon staple were discussed by H. Kennette, of E. I. duPont de Nemours & Co., New York. Mr. Kennette's paper will be found on page 78 of this issue.

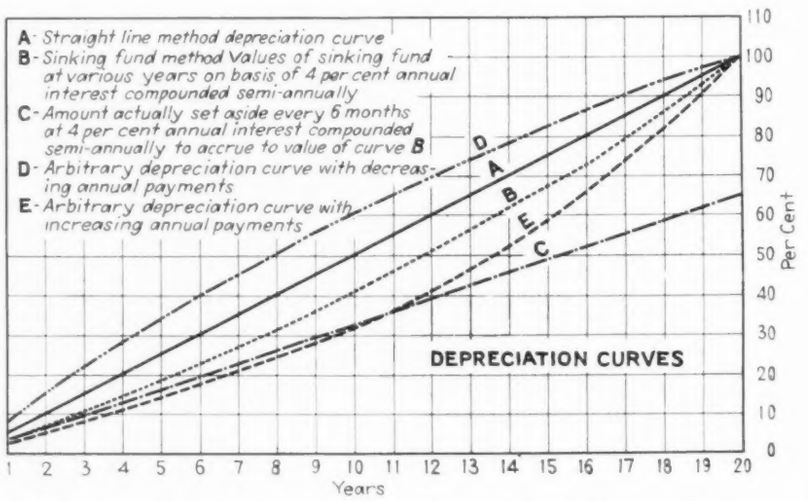

A- Straight line method depreciation curve
B- Sinking fund method Values of sinking fund at various years on basis of 4 per cent annual interest compounded semi-annually
C- Amount actually set aside every 6 months at 4 per cent annual interest compounded semi-annually to accrue to value of curve B
D- Arbitrary depreciation curve with decreasing annual payments
E- Arbitrary depreciation curve with increasing annual payments
DEPRECIATION CURVES
Years
Per Cent
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0 10 20 30 40 50 60 70 80 90 100 110

Chart prepared by R. DeVere Hope to show action of various depreciation methods.

W. Harry Vaughan, director of State Engineering Experiment Station, Georgia School of Technology, Atlanta, Ga., spoke on engineering research and the development of human and natural resources. The speaker stressed the idea that by the proper direction of human energy and brain power, in the alliance between research, agriculture, and industry, the gap may be closed between the desire for useful products and the raw materials with which nature has endowed us. Soil and forestry products; mineral, water, and natural resources, were all discussed in relation to human progress through research.

Depreciation

R. DeVere Hope, consulting engineer, Newark, N. J., presented a paper on depreciation applicable to the textile industry. The elements of property included in this study comprise a group of textile plants located in New York, New Jersey, and Pennsylvania. The several kinds of depreciation were discussed, such as normal wear, functional, contingent; and ways of setting aside adequate amounts to provide for this depreciation were suggested.

Annual depreciation, according to Mr. Hope, expressed in terms of a formula may be:

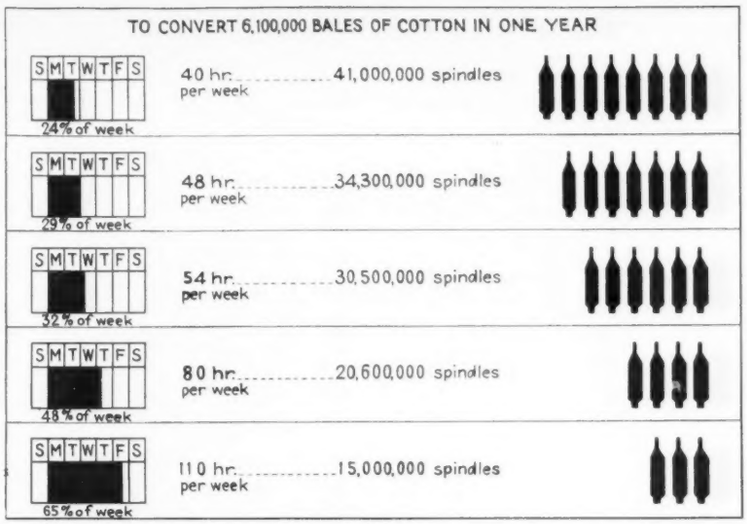
Depreciation = (Cost New — Salvage Value) ÷ (Years of Useful Life).

This formula would set up annual rates on the basis of the straight-line method, which is probably the simplest method and is generally adopted. The fallacy of this method is that it does not take into account interest allowance, and usually produces a larger fund than is necessary. Other methods which also meet the requirements of the U. S. Treasury Dept. are the sinking-fund method, the arbitrary method, and the gross earnings method. The sinking-fund method, which has the sanction of many authorities, consists of laying aside each year during the life of the equipment, a fixed sum, which, with accruals of interest compounded regularly at a proper rate, will produce a sum equal to the original cost less salvage value.

A simple method of compiling statistics for depreciation consists in recording the age of each unit of equipment as it goes out of service, and then—after a sufficient number of units of the same class have been recorded—summarizing the data in a table.

In conclusion, Mr. Hope made the following recommendations: (1) Charge depreciation to cost of products, so that profits may be real and not a distribution of capital. (2) Make proper allowance for inadequacy and obsolescence, as these may often be the determining factors in the depreciation account. (3) Make frequent inspections and keep proper records with respect to specific units of property.

At the dinner meeting Eugene W. O'Brien, vice-president W. R. C. Smith Publishing Co. Atlanta, Ga., acted as toastmaster. J. E. Sirrine, of J. E. Sirrine & Co., Greenville, S. C., spoke briefly, but forcefully, on the necessity of modernization in our industries. "Obsolescence," he said, "is not a question of age, but of competition."



Graphic presentation of relationship between number of hours worked per week and number of active spindles needed to handle 6,100,000 bales of cotton annually

"The Vanishing Spindle"

A. W. Benoit, chairman of the Textile Division of A.S.M.E., and a member of the firm of Chas. T. Main, Inc., Boston, Mass., presented the next paper. His subject was "The Vanishing Spindle." The speaker pointed out that from 1905 to 1925 cotton spindles in place in this country increased about 1,000,000 a year. In 1925 we had almost 38,000,000 spindles, and felt very proud of this industry which promised even greater dimensions. From 1905 to 1923 there were at all times from 500,000 to 1,000,000 idle spindles. During the next ten years (1924–1934) these idle spindles increased, reaching from 2,000,000 to 4,000,000.

From 1925 to 1936 the number of spindles in place dropped from 38,000,000 to about 28,000,000—a loss of about 1,000,000 a year on average. Many reasons have been given for this decrease in spindles. The most obvious things which affect the problem, Mr. Benoit said, are (1) consumption of cotton, (2) change in amount of product per spindle, (3) average number of yarn spun, and (4) hours of operation of the mills.

Average consumption of cotton does not vary far from 6,100,000 bales a year, fluctuation being 10 to 15% above or below the average; increase due to production per spindle is about 5%; average number of yarn spun indicates a change of less than one count; and finally hours of operation seem to be the greatest single factor in relegating old spindles to the scrap pile.

The number of spindles required to convert 6,100,000 bales of cotton into yarn will vary with the number of hours they are operated, as shown by the following table:

40 hours operation requires 41,000,000
48 hours operation requires 34,300,000
54 hours operation requires 30,500,000
80 hours operation requires 20,600,000
110 hours operation requires 15,000,000

There will probably always be some inactive spindles and even in good times this group has numbered at least 500,000.

The greatest likelihood is that the industry will settle down to two 40-hr. shifts or 80 hr. per week; a possible alternative is three 30-hr. shifts or 90 hr. per week. Under the first condition spindles required will be 21,000,000; under the second about 19,000,000. Spindles in place Jan. 1, 1937 were 27,700,000 and those reported active numbered about 24,000,000.

If we were to accept these premises and the 11-year trend, the conclusion must be that there are still three to six million spindles to be scrapped. However this answer may not be wholly correct because of the many social and economic factors which will affect the trend.

While disclaiming the role of a prophet, Mr. Benoit gave, at the conclusion of his study, his opinion that there were still several million spindles to be retired from service before the industry could be considered stabilized. He thinks this will follow retirement of groups of spindles as they become obsolete in active mills rather than liquidation of entire plants.

The last speaker, Dr. William J. Hale, consulting chemist, Dow Chemical Co., Midland, Mich., discussed the activities of the Farm Chemurgic Council in advancing the industrial uses of American farm products.

KNITTERS OPTIMISTIC

Confidence marks hosiery and underwear conventions at Philadelphia

HOSIERY and underwear manufacturers gathered en masse at their respective conventions in Philadelphia last month, coincident to the Knitting Arts Exhibition which, for the third successive year, was held under joint auspices of the National Association of Hosiery Manufacturers and the Underwear Institute. While both conventions gave emphasis to legislative, labor and merchandising problems, they differed in approach and in action. Probably the major point of accord between the two major knit branches, as manifested in convention addresses and informal discussion, was the feeling of cheerfulness regarding economic outlook. Recognizing that many problems still await solution, the knitters—thanks to healthily-filled salesbooks—expressed confidence in prospects for the 1937–1938 year.

HOSIERY OUTLOOK PROMISING

PROSPECTS for prosperity in the hosiery industry during 1937–1938 depend upon various contingencies, with the favorable and unfavorable factors about equally divided. Such was the trend of opinion at the annual convention of the National Association of Hosiery Manufacturers, held April 21, in Philadelphia. As in other years, the meeting was held coincident to the Knitting Arts Exhibition at the Commercial Museum. While the program covered virtually all industry problems, attention centered on four chief aspects. The first two of these were definitely optimistic in nature: (a) satisfaction over the success of the exhibition which was generally agreed to have been "the best ever"; and (b) approval of the Japanese-American hosiery import agreement covering cotton and rayon seamless. The second two were cautionary in substance: (a) a warning by John H. Vogt, president, Nolde & Horst Co., that the Reading, Pa. labor accord should be regarded as just a preliminary to similar union activity in other hosiery districts; and (b) a prediction by John W. Mettler, president, Interwoven Stocking Co. that the present inflationary trend will bring an industrial crisis next year.

With due allowance for the words of warning, optimism was the keynote of the meeting. In his opening address, as association president, William H. Gosch, president, Nolde & Horst Sales Co., cited three signs as pointing to improved conditions: (a) increase in hosiery consumption; (b) scarcity of second-hand equipment and increased new equipment activity; (c) higher supplies costs bringing higher hosiery prices. He remarked, in conclusion, that the growing cooperative spirit among manufacturers promised well for satisfactory solution of problems.

Wm. H. Gosch, reelected head of hosiery association

Earl Constantine, managing director, made a rapid survey of the association's accomplishments. Interest centered on his announcement of the terms of the agreement reached with the Japanese on imports. This pact has three divisions: (a) it spans three years—1937, 1938, 1939; (b) it limits hosiery imports from Japan to 1,500,000 doz. pr., annually, a 30% reduction from the 1936 total of 2,144,455; (c) it covers cotton, rayon and cotton-rayon hosiery, the rayon being included in anticipation of a possible later rise in that branch due to the sensational rise in Japan's rayon yarn production.

Three other points stressed by Mr. Constantine were: (a) in line with the increasing responsibilities of trade organizations due to national legislation, the association plans a membership drive this year; (b) more attention will be given by the association this year to the industry's merchandising; and (c) progress is being made to familiarize manufacturers and distributors with the new standards of construction and inspection for women's full-fashioned.

Following praise by President Gosch, a tribute of applause was paid by the convention to the work of the Raw Silk Committee. This committee reported on its continued efforts to coordinate American and Japanese silk testing methods, with special reference to comparisons between the seriplane and the 9-meter methods. The report described how 16 raw samples had been tested by 3 methods in 3 different laboratories, thrown and knit by both single and 3-carrier systems into 4060 stockings. A report on these tests was sent to Japan, and the Japanese reply, recently received, now is being studied by the committee. Mr. Constantine said that the Textile Foundation had expressed keen interest in the recent tests, and he also voiced the hope that eventually the Foundation might give further financial support to help enlarge the work.

Legislative issues were discussed in detail, both in scheduled addresses, and impromptu from the floor, with attention divided between the Wagner Labor Relations Act, as construed by the Supreme Court, and the pending Ellenbogen Bill. A four-page interpretation of the Wagner Law by Frank H. Twyeffort, association counsel, which was distributed, explained the relation of the law to the hosiery industry.

A change in the association's fiscal year from a calendar year basis to an April-to-April basis, thus making it parallel annual meetings was announced by Mr. Constantine on behalf of Ernest Blood, president, John Blood & Co., as treasurer; it was explained that a report covering the 18 months period would be completed shortly. The association re-elected all officers as follows: president—Wm. H. Gosch, president, Nolde & Horst Sales Co.; vice-presidents—Austin H. Carr, of Durham Hosiery Mills, and Roy E. Tilles, president, Gotham Silk Hosiery Co.; treasurer—Ernest Blood; managing director—Earl Constantine.

Various informal talks supplemented the fixed program and added much to the value of the meeting. Close attention greeted alike the remarks of Mr. Vogt, who analyzed the Reading union agreement in its relation to the industry as a whole, and the comments made at the close of the convention by Mr. Mettler, who favored slowly rising prices but warned against high inventories in fall. Mr. Constantine won quick popularity when he made known that the

Association was considering a cruise next October to Bermuda, to permit members to analyze industry problems in complete detachment from business. The success of the convention disproved any fears that the February meetings in New York might have "stolen the thunder" from the annual event. The convention was notable for its economy of time, occupying less than three hours in all, yet including a complete and comprehensive program.

SIFT UNDERWEAR PROBLEMS

FRANK and decisive expression on legislative and labor issues, emphasis on the increasing importance of cost study, and preliminary consideration of plans for a distribution survey—these were the highlights of the annual convention of the Underwear Institute which was held April 22, at Commercial Museum, Philadelphia. The meeting marked the third year of the dual arrangement by which underwear and hosiery conventions are held under the same roof during Knitting Arts week.

Problems of the underwear industry were submitted to microscopic examination in a swiftly-moving program of addresses. One major action by the convention was adoption of a resolution opposing the Ellenbogen Bill. This action followed an analysis of the measure by Roy A. Cheney, managing director of the Institute, who said the bill, if enacted, would necessitate a 55% increase in prices.

Starting at 9:30 a.m., with a brief extemporaneous statement by Ralph M. Jones, vice-president, Utica Knitting Co., as president, the convention proceeded with dispatch through an extended schedule.

Mr. Jones confined his remarks to contrasting the even keel of the industry in 1936 with the problems of 1937, which he said were as complex and vital as in NRA days. Need for higher prices to equalize higher costs, and the substantial financial resources of labor unions as compared to those of trade associations, were among the points emphasized by Mr. Cheney in his yearly review. To illustrate the latter, he said that one underwear mill through the check-off system pays its local union $3,500 yearly in dues collected from its employees, as against $1,000 yearly paid to its trade association.

Mr. Cheney portrayed 1936 as preeminently a year of research, statistical compilation, and legislative activity. Six reports covering various vital aspects and branches of the industry were issued, in addition to "Business-Building Facts," the survey report prepared by F. E. Simmons, vice-director, which Mr. Cheney praised as "a fine practical work." The managing director also commended the increased activity of Institute groups and urged continued close study of legislative matters.

Manufacturers should pay more attention to costs so that they will be equipped to face the increasing government supervision of industry. This point was stressed repeatedly during the convention. It was referred to by Mr. Cheney, by the Institute Cost Committee, and finally by Earle E. West, vice-director, in a talk on "The Future of Costs in the Industry."

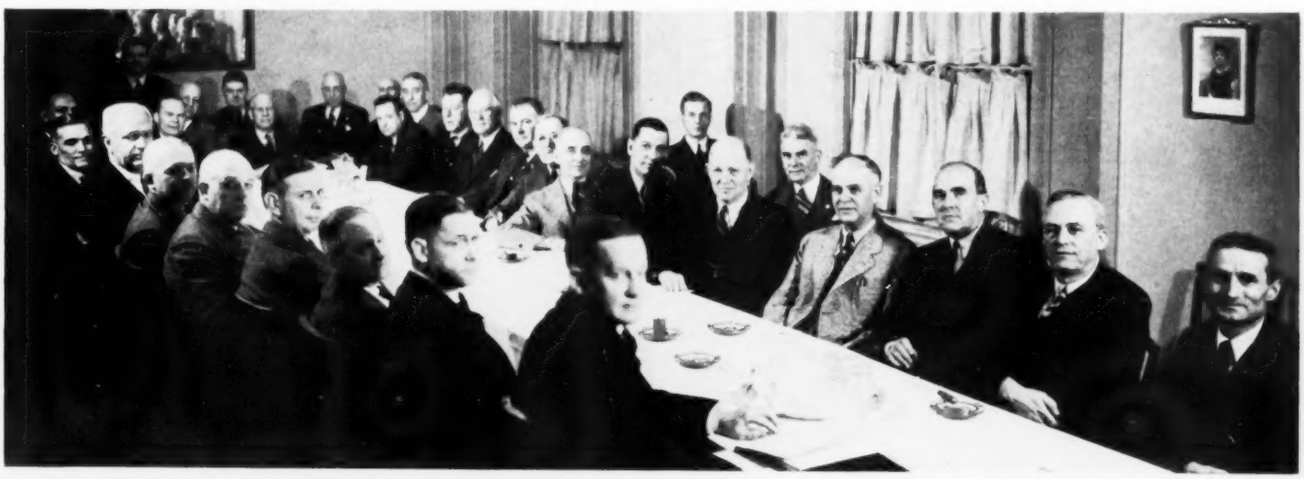
Following the treasurer's report by Oscar W. Gridley, which showed the Institute to be still on the black side of the ledger, the convention heard Mr. Simmons discuss "The Future of Statistics in the Industry." Because of the growing importance of such data and the widespread approval of the Institute's survey as presented in "Business-Building Facts," special attention centered on this talk. Mr. Simmons pointed out that the groundwork for the Institute's statistics was laid in pre-NRA days by Mr. Cheney. The speaker said the Institute planned to gather data on distribution to balance the data now available on production.

Discussing the Institute's work on costs, Mr. West said that study of this problem to date pointed to two main conclusions: First, that a uniform system of costs is impractical; second, that the most efficient approach is to widen the scope of cost surveys and establish principles for allocation and classification of all expenses. The industry's showing at the recent Walsh-Healey hearing, which drew frequent expressions of approval from members, was summarized in a committee report.

Integration trends in the industry were the subject of a talk by Robert D. Gray, of the Industrial Research Department, University of Pennsylvania. Qualifying his remarks with a reminder that the integration study by his organization which will cover all the chief textile branches is not yet completed, Mr. Gray described the findings of the study with respect to the underwear branch. Among many interesting points brought out by the speaker was the fact that while some mills incline to narrow their function, others are extending their operations. The basic value of the study, he asserted, will be to show the various textile branches how other divisions of the industry have solved parallel problems.

Other speakers were John D. Strain, industrial relations counsellor of the Institute, who discussed labor relations, Henry Miller, of the Federal Trade Commission, who explained the machinery of trade practice conferences, and Congressman Wright Patman, who described the industrial applications of the Robinson-Patman Act in a luncheon talk.

Election of officers of the Institute resulted in retention of the following officers: President—Ralph M. Jones, vice-president, Utica Knitting Co.; vice-president—Benjamin C. Russell, Russell Mfg. Co.; treasurer—Oscar W. Gridley, president, Utica Knitting Co.; managing director—Roy A. Cheney.



Officers and executive committee of Underwear Institute at lunch at Benjamin Franklin Hotel, Philadelphia, on April 21

GREENVILLE SIDE-SHOWS

Many additional events enhance value of Exposition Week

THE Southern Textile Exposition officially opened at 10 a.m., Monday, April 5 with Dr. B. E. Geer, president of Furman University and former president of Textile Hall Corp., presiding over the exercises. J. M. Mauldin, mayor of Greenville, introduced the featured speaker, Olin D. Johnston, governor of South Carolina. Governor Johnston, himself a product of the cotton-textile industry, dealt at length with facts and figures relative to manufacturing in the State. He stressed the fact that he believes the mills are in for a bright period of operation, but made no direct reference to the labor situation. Some listeners interpreted certain of his remarks to indicate that the governor has hopes that no disturbance will interrupt the present smooth operation of the mills which he praised highly.

S.T.A. Meeting

A brilliant array of leaders among the operating executives of the industry heard D. E. W. Sikes, president of Clemson (S. C.) College, speak at the annual luncheon of the Southern Textile Association on Friday. Tracing the history of cotton manufacturing in the State from its beginning at Society Hill and Graniteville, Dr. Sikes paid tribute to the pioneers who built the industry into its present position of importance. He said that the present needs of the industry include improved manufacturing technique as sponsored by the various textile schools, a system of staggering industry and agriculture, and greater mass purchasing power in keeping with production and desire. The frontier is no longer in the West, he concluded, but on our doorstep.

Fred L. Still, president of S.T.A., presided over the meeting. Brief talks were made by L. J. Rushworth, of Danville, Va., Edwin Holt, of Cooleemee, N. C., W. G. Sirrine, president of Textile Hall Corp., Edwin Howard, chairman of the entertainment committee, and A. H. Cottingham, general manager of Victor-Mohaghan Co., who introduced Dr. Sikes. Marshall Dilling, of Gastonia, N. C., introduced E. T. Pickard, secretary of the Textile Foundation. Other honor guests included present and past officials of the association.

Lowell Textile Reunion

A group of some 30 alumni of Lowell Textile Institute gathered for a reunion at Dave Stansell's Road House near Greenville on Wednesday evening. Harold P. Goller, '23, who is residing in Greenville as southern representative of Cloroben Corp., acted as toastmaster and introduced Charles H. Eames, president of the institute, as speaker.

President Eames reported recent progress at Lowell, including completion of the new athletic field north of the main campus and the securing of Governor Hurley's support in getting through the legislature an appropriation for adding three stories to the chemical building. He also announced the establishing of a new course in selling and another in costume designing, a day enrollment of 219 and evening enrollment of 2,100 (including 350 in a new course on diesel engines), the imminent graduation of the first two students to work for the new Master of Science degrees, and the installation of new Whitin spinning equipment.

Other Events

Over 50 manufacturers from Germany arrived in Greenville on Wednesday where they were greeted by a delegation of citizens who acquainted them with the exposition. The Greenville Junior Chamber of Commerce entertained the Germans at an informal luncheon at the Poinsett Club on Thursday, after which they left the city to continue their tour of the textile areas of the United States.

A delegation from the South Carolina General Assembly was entertained at an informal dinner-dance Thursday evening. Speaker of the evening was J. E. Sirrine, president of J. E. Sirrine & Co., who pointed out to the legislators that taxes on industrial firms locating in South Carolina are higher than in any other southern State. Mr. Sirrine praised the wage increases and shortened hours, and exhorted the law makers to keep labor laws in step with those of competitive States.

During the week there were meetings of the various civic clubs at which several visiting manufacturers and executives were invited to speak. The annual Cotton Ball was held Friday night, bringing to an end the scheduled social functions of the exposition. A meeting held by the American Society of Mechanical Engineers is reported elsewhere in this issue.

The Overseers Corner

The Place for a Call-Down

"I never saw you with such a half-in-the-dumps and half-in-the-clouds look before," Bill remarked as he and Pete sauntered from the mill. "Have you been looking at the sky and suddenly found that you were walking in spring mud?"

"It's hard to explain," Pete replied after a moment of silence, "but I'll do my best. This afternoon the super called me up to the main office. I had made a dumb mistake, and I knew that things had been in a mess because that special order hadn't gone through on time. Well, to make a long story short, the super took me into the treasurer's office, which happened to be vacant at the time, and quietly told me what a jam I'd gotten the firm in.

"Of course that wasn't much fun," Pete went on, "but I can't think of any better method of getting balled out. The super is always decent, of course, but the point is that up there everything was so impersonal that we talked things over in such a way that I didn't feel in the least that he was picking on me or that there was something wrong with me. It was all very business-like and cold."

"I don't understand you, Pete." Bill muttered. "Usually you don't like to go to the dentist's."

"Certainly I don't," Pete rejoined, "but what has that to do with it?"

"Plenty, if you only knew it," said Bill. "If the super drags me up to one of those solemn executive offices I feel as though I were about to undergo an operation. I get chilled and feel distant. Now, my idea is that if the super wants to ball me out he should come down to my department, put his feet up on the desk, and casually bring up the subject of the mistake I'd made. That way, everything would be friendly and I wouldn't feel hurt."

"No! And everything would be so lovely it wouldn't do you a bit of good either," Pete shot back.

• Do YOU think that a superintendent should reprimand an overseer in the main office or in the overseer's department?

In itself, the subject of publicity for employee earnings is, I think, in the "molehill" classification. It is not the subject, itself, which is of most importance, but rather the element of industrial relations psychology involved. From experience, I have found that the majority of lower-bracket employees (those most concerned) discuss freely among themselves the contents of their pay envelopes.

The real point at issue, as I said, involves employer-employee psychology. One of the things which contributes greatly to unrest and suspicion between employer and employee—two people who should be getting along, if any two can—is the tendency to secrecy. Whether warranted or not, secrecy always leaves a bad taste in someone's mouth. Ulterior motives are suspected and such suspicions are dynamite.

It will be argued that a lot of headaches will result because an employee will feel that he is getting less than someone else who should be getting the same or less than he. I grant this, but to me the elimination of another factor outweighs this theoretical disadvantage.

In many cases, two persons earning approximately the same amount will live quite differently. One will have a nice home, automobile, money in the bank, and apparently making plenty of money. The other, actually on the same income, is always in trouble of a financial nature. The latter (never willing to admit his inferior managing ability and not knowing of the other chap's earnings) feels that he is not getting a square deal. He is resentful—not so much toward his fellow-employee, but toward someone in the management who is giving this other chap all the breaks, while he, himself, "working and slaving" is getting off at the small end. I'll

The Golden Rule

Editor, Overseers' Corner:

It is refreshing to have Pete and Bill back on the job.

It seems to me that Bill has the right idea regarding the correction of an assistant in front of operatives. The overseer should be considerate of his assistant's feeling. Such actions would soon cause operatives to lose respect for their immediate superior and thereby be detrimental to the efficiency of the department. Assistants who have erred should be corrected privately, and the same holds true for any operative.

The treating of others as you would like to be treated will result in mutual respect, which spells harmony—bigger and better production in any department.

P.M.C.

Likes Posting Wages

Editor, Overseers' Corner:

I am favorably inclined toward the practice of posting weekly earnings of employees. This matter touches deeply upon the economic structure of management—more deeply, I think, than many executives realize.

CONTRIBUTIONS ***to "The Overseers' Corner" are paid for without regard to length. We will use letters discussing the narrative on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks or practical helps will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you—contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York, N. Y.***

The Overseer's Corner

bet we would all receive a surprise if we knew just how often this happens.

The main question as I see it is whether it is a good policy to start—not whether it is a good policy—because in the starting is where the trouble lies. The initiation of such an idea must be handled very wisely. Once a fact, I believe it to be a beneficial policy. I have seen personally the psychological reaction of both plans, through working in factories in my younger days, and also working in government factories under civil service or army regulations.

P. W. SCHUBERT

Against Payroll Posting

Editor, Overseers' Corner:

As I am deeply interested in the Overseers' Corner, I have been tempted to write many times before, but this time I am determined to give my viewpoint on posting the payroll.

I do not feel that the payroll should be posted, as this would create a bad feeling among the employees. For instance, in our department we have a number of fullers and no two—or at least very few—get the same pay. This is also true of our washer operatives. Therefore, to my mind, there would be bad feeling among our employees in this department, for there would be arguments about doing the same kind of work, etc. Still some fellows are not as good as those who get more.

Posting the payroll might be a good thing where all employees are on piece rates. Where they are all on the same rate, it would make the slow ones step up a bit to keep in step with the leaders. In conclusion, it would be good in some departments and very bad in others where employees are on weekly pay.

J.W.E.L.

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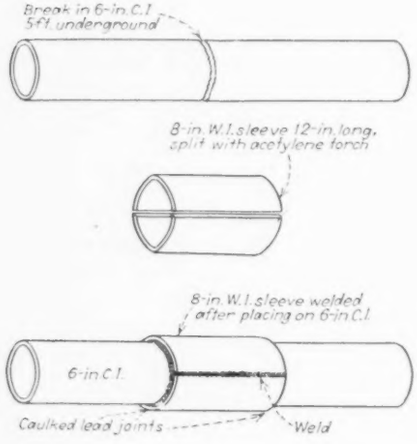
Overseers' Practical Helps

Quick Pipe Repair

The accompanying sketches show how a break in a 6-in., underground, cast-iron fire main was repaired quickly after being uncovered. This method was adopted because of the circumstance that the main ran parallel to a coal-chute trestle and somewhat under the sills of the benches. As the ground had been softened by incessant and long-continued rainfall, to clear the pipeline enough to replace one joint of bell and spigot pipe would have been exceedingly dangerous without taking the time and incurring the expense of shoring up the trestle, which had several cars of coal on it.


Break in 6-in C.I. 5 ft. underground
8-in. W.I. sleeve 12-in. long, split with acetylene torch
8-in. W.I. sleeve welded after placing on 6-in C.I.
6-in C.I.
Caulked lead joints
Weld

The repair sleeve is simply a piece of standard 8-in. wrought-iron pipe which has been split longitudinally by means of an oxy-acetylene cutting torch, and then welded back together over the broken 6-in. main. After welding, the now one-piece sleeve was centered over the break, properly yarned with oakum just as any standard lead joint in B. & S. style pipe, and then poured with molten lead which is well caulked after cooling. This joint is quickly made, and stands inspector's test pressures. It is well to paint the whole sleeve with a good asphalt coating material after caulking up any slight seepage leaks, to prevent the wrought-iron sleeve being attacked by moisture in the soil.

H. H. ILER

Dealing With Complaints

There is an old Yorkshire saying: "No complaints, no business." During ten years of traveling around Yorkshire (England) worsted mills selling winding machinery, the writer has come across many ideas for eliminating complaints.

A notable plan in a concern of about 30,000 spindles is the setting aside of a certain sum of money each year to meet complaints. Whatever is left from this sum at the end of the year is shared out at Christmas, when it is most welcome, among the 28 department heads (called "overlookers" over here). Claims are only debited to this account when they can be traced to faulty supervision or bad workmanship in the mill, and the manager (who does not participate in this scheme, but receives a bonus on production) has the final decision on this point.

The plan has been in operation for six years and the overlookers have received progressively greater amounts each year, although the amount set aside has not been altered after the first year. The firm is noted for keeping its delivery promises and for the high standard of its yarns.

The manager reports greater coordination of departments and a real interest among his overlookers. Attention is drawn to defects earlier, with the result that many can be rectified before they are serious. The yarn salesmen report that customers' confidence is increasing. The overlookers are paid the rates that are standard throughout the district and the extra money they receive is well known, with the result that the firm has a choice of the best men whenever a rare vacancy occurs.

G. D. HOLMES
Universal Winding Co., England

Improving Beam Stand

One of our men who operates a section beamer suggested a little kink that has proved very satisfactory, so I am passing it on for what it might be worth to some reader of TEXTILE WORLD. Fig. I illustrates a section-beamer creel (which is similar to a slasher creel). The tierods *A* are in the way when taking down empty beams and putting up a full creel, as the tender has to step over them many times—frequently bumping his shins. We removed these tierods and braced the sides of the creel with flat iron braces ($\frac{3}{8}$x2 in.) *B* and *B'*,

Jacquard Lubrication

Due to editorial error, which we regret, two sentences in the article "Loom Lubrication," by Ivar Moberg, April, page 118, were incorrectly presented. The eighth to eleventh lines under the cross head "Oiling the Jacquard," which concern the lubrication of needles and hooks, should read as follows: "Application can be made neither (not 'either,' as originally printed) with oilcan, brush, or grease gun. In this case we may turn to application of the lubricant by atomized spraying."

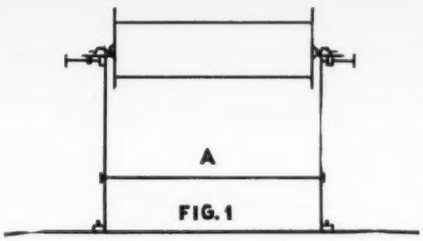


Fig. 1. Front elevation of section-beamer creel (not in true proportions).

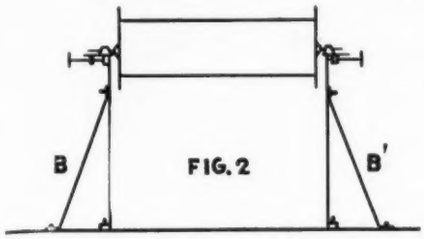


Fig. 2. Tie rods have been removed and braces B and B' installed.

making the beam stands very sturdy while the space inside is left clear for the tender. L.P.

Keeping Machinery Clean

There have been many suggestions in regard to keeping the mill clean, but none about keeping the machinery clean. I have been in several mills where the buildings were clean, but the machinery itself was very dirty with lint and the accumulation of oil and dust. Most mills use brushes, compressed air, and vacuum cleaners. All these will clean off the lint and dust, but to keep the machinery itself clean it must be wiped free of the oil and dust which gathers.

A wiper is the best way to clean machinery, as it absorbs the oil and grease, leaving the surface clean and dry. I am not condemning brushes, compressed air, or vacuum cleaners, as everyone knows that they permit much faster cleaning. I suggest that daily cleaning should be done with brushes, etc., but that weekly cleaning should be done with wipers.

Practically every mill has a certain amount of seconds or waste which make very good wipers. If the supervisor is good, these wipers will not leave the mill until they have done the cleaning for which they were intended.

D.E.F.

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Why Crepes Go Wrong

Some tips on shires, finger marks, diamonds, and other weaving defects

By Henry Miedendorp, Jr.
Consulting Textile Engineer

CREPES and fabrics of the crepe family, such as crepe satins, meteors, etc., while of simple construction, are difficult to make satisfactorily unless the materials used and the setting of looms are right. Some of the imperfections which are commonly found in such merchandise are shires, rope-friction marks, finger marks, and poor joinings; and most of these are hard to detect in the raw or undyed cloth unless the cloth is thoroughly examined. The cloth should be so rolled that the inspector can see through it as it passes over the examining machine. With proper care most of these imperfections can be prevented.

Rope-friction marks

Some looms are equipped with automatic let-off attachments, but the majority are run with rope or chain let-off on beam flanges. Too heavy a rope or poor, worn-out ropes are bad. Best results can be obtained from a ½-in. manila rope, four laps around the beam head, one of the laps running through a pulley attached to a hook midway between the floor and the beam head—or grooved beam heads may be used. Keep ropes clean and do not use French chalk or anything of a like nature.

Beam heads must be firm on the beam. Small wood screws on old-style beam heads work loose; therefore they should be replaced with lag screws. If beams are fitted with iron rods, the nuts should always be kept tight. Weight applied to the warp is important, and it should be at least 15 lb. per 1000/1 ends of warp at the start and reduced gradually as the warp becomes shorter.

Shires

Shires are generally caused by the following: Pressure felt rollers are often worn and slip from the rollers, or they may be poorly adjusted. Worn felt rollers should be replaced at once. Felt put on rollers with ordinary glue is time and money wasted. The rollers should be cleaned bright, given a coat of shellac, allowed to dry thoroughly, given a second coat of shellac, and again allowed to dry before the felt is put on with another or third coat of shellac. Felt rollers repaired this way will hold until the felt is worn out.

Poor, torn, or worn-out sandpaper on the sand rollers will cause all kinds of trouble and should be repaired as soon as they show signs of wear.

Take-up gears should mesh right. If they do not, the cloth roller will do the taking-up instead of the sand roller, resulting in an improper amount of picks in the cloth.

Tight reeds are bad. The reeds should have play both ways.

Steady power is another very important requirement for the weaving of crepes. Therefore all belting, if looms are belt driven, should be of good quality and kept clean. If looms are individual-motor driven, care should be taken to see that gears are properly meshed and not worn out or stuck.

The key which holds the gear on the sand roller will wear as soon as there is a little play in it, and the weaver will then have trouble in making a good joining. The sand roller should be tested after every warp is finished and repairs made if this fault is found.

Width in reed depends on the quality of the goods or whether the goods are to be pure-dyed or weighted. For pure-dye fabrics, the width in reed should be about 6% more than the width wanted in the finished cloth; while for weighted goods, it should be 10% or more. This applies to crepe-de-chine only; crepe satins will require 15 to 20% more, depending on the quality.

Spots or Diamonds

Spots or diamonds, as they are called by the trade, are generally caused by weak spots in the filling. These are often the throwster's fault and are the result of throwing the silk on machines with cut guides and flyers, which tear the thread but do not break it entirely. Filling so damaged parts in the dyeing and finishing and shows up as small diamonds. Too much pick on the picker is another cause, as this stretches the thread to almost the breaking point, so that when goods are finished the threads break and show up as small spots. Worn-out or cut shuttle eyes and shuttle tensions will do the same, with like results after dyeing and finishing.

The loom should be properly timed and the shed should be open only enough to allow the shuttle to pass through without undue friction. It is advisable to use flat steel heddles in the harness, not over 30 heddles per inch per shaft, so as not to crowd them. They should hang properly and not bind or catch.

It should be unnecessary to state that

the warp should be perfect—warped with Swiss motion and showing no section marks—for a warp well made is half woven.

Weavers should not work behind the loom while the loom is running, as leaning on the warp or spreading the ends will cause what are called "finger marks"—open and tight filling spots.

Looms should be equipped with center filling stop motions; and, when weaving georgettes, they should have warp stop motions.

Crepe-de-chine warps should be entered in the harness with a skip draw, while crepe satins should be entered with straight draw, as in both cases it makes it easier to obtain the shed and keeps the ends from rubbing against each other as the shed changes between picks.

The above are some of the most important points to bear in mind in order to manufacture salable merchandise, but there are many more small and important details to be looked after, all of which a reliable and competent foreman knows about and checks up on regularly. Constant inspection of looms, equipment, and adjustments will pay in better merchandise and in less complaints and allowances; and it will eliminate the need to "alibi" faulty work.

Dyer's Responsibilities

It has been a common habit to blame dyers for many faults which show up in the finished merchandise; but they ought not to be held responsible for diamonds or spots; rough cloth, which of course is poor tension in the shuttle or rebound of the shuttle in the box; shires; poor joinings or finger marks; weaving inperfections; or unsuitable width of goods. But dyers should be held responsible for chafing marks; poor matching; and, to some extent, the hand of the goods.

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Air Conditioning

and labor relations discussed at N.C.-Va. division meeting of S.T.A.

THE human side of industry, as well as mechanical problems of operation, was considered at the spring meeting of the Northern North Carolina-Virginia Division of the Southern Textile Association, held April 24, at Leaksville, N. C. The session was presided over by L. J. Rushworth, of Riverside & Dan River Cotton Mills, Inc., Danville, Va., chairman of the division. Speakers included Robert R. West, president of Riverside & Dan River Cotton Mills, Inc., who addressed the group on "Trends in the Textile Industry"; and J. R. Henderson, of Parks-Cramer Co., Charlotte, N. C., who presented a paper entitled "Air Conditioning in the Textile Industry."

In his paper, Mr. Henderson traced the history of air conditioning in textile mills, outlined the advantages of air conditioning in various operations, and discussed the principal types of equipment now available. Speaking of present-day practice, he said:

Principles to Be Observed

"Methods of calculating humidifying and ventilating capacities for textile installations have been highly perfected in recent years. Rules of thumb have ben largely discarded in favor of exact mathematical calculations in all cases where thermal data are known or can readily be ascertained. These improved methods of calculation, coupled with improved design of the humidifying and automatic regulating equipment, have made it possible to secure more satisfactory and stable atmospheric conditions in all mill departments, with consequently greater return on the invested capital.

"No longer is it satisfactory to install an arbitrary number of units or pounds of water per hour for each unit of volume in a mill and department of stated character. Instead we secure accurate data on the amount of heat to be absorbed (including heat from motors and processing machines, lights, people, and from outdoors) at the required atmospheric conditions. With these as a basis, the required evaporative capacity and frequency of air changes are computed. Outdoor conditions against which capacities are desirably figured are ascertained from a summary of Weather Bureau statistics covering many years.

"In establishing desirable limits of temperature, humidity, and air movement from the point of view of comfort and efficiency of the workers, research data on 'effective temperature,' published in the Transactions of the American Society of Heating & Ventilating Engineers, have been used to advantage. These limits have been checked by numerous mill tests. In this connection distinction between ideal and commercial limits of comfort should not be overlooked."

J. R. Henderson who spoke at Leaksville

In the free-for-all discussion which followed the presentation of Mr. Henderson's paper, various members of the division brought out the points summarized below:

Two similar plants, each carrying the same humidity and one equipped with direct humidification and the other with

KEY MEN AT STONECUTTER — Front row, left to right: J. H. Armstrong, overseer of filling, L. H. Thomas, overseer of preparation, A. C. Roberson, overseer of weaving; back row, J. F. Eastham, general superintendent of weaving, H. A. Hampe, designer, O. B. Lancaster, overseer of weaving, G. A. Schaffert, plant engineer, P. L. Crotts, overseer of weaving.

central-station air conditioning or air-changing equipment, may show a difference of 10°F. on a hot summer day. This is because the air in the latter plant is brought in through ducts under pressure. The first mentioned plant could reach the same degree of cooling by creating the proper number of air changes.

Generally speaking, temperature is lowered with increased humidity. For example, a temperature of 91°F. with 55% relative humidity would drop to 86°F. if the humidity were raised to 75%.

The cost of installing air-conditioning equipment is dependent on the evaporative capacity required which varies with the type of machinery in the room. For example, a spinning room equipped with individual motors would require 15% more evaporative capacity than a similar room (with the frames requiring the same amount of actual horsepower) driven from shafting with belts, the motor being located outside the area being conditioned.

With direct humidification, temperature can be controlled accurately in winter, but in summer it cannot be controlled without central-station or air-changing equipment. Direct humidification with air changers will reduce inside temperature considerably below outside.

A member asked for information on air conditioning a mill processing cut rayon or staple fiber on cotton machinery, complaining that with ordinary humidification he has two heads over one hopper and one head over another in the blending, picking and carding room—and still does not get sufficient regain. It was suggested that the time element is insufficient for the rayon to absorb enough moisture.

With reference to air conditioning picker rooms, it was agreed that an orthodox system is satisfactory, yet considerable moisture is required due to excessive air changes which are necessary for the pickers.

During cold weather, water going into weave-room humidifiers often is heated to facilitate evaporation, but ordinarily this is not necessary for spinning and twisting rooms where there is more heat from machines. Where central station conditioning is used in the weave room, free moisture is also necessary.

Long-draft spinning requires a maximum of 60% relative humidity. A card room equipped with long-draft devices would probably require higher humidity than an ordinary card room to secure proper regain as the cotton remains in process a much shorter length of time.

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Student Style Show

and textile exposition at Raleigh

Miss Mary Seagraves of Meredith College, awarded grand prize at Student Style Show at N. C. State College.

MISS MARY LANIER SEAGRAVES, of Meredith College, was awarded the grand prize for the most attractive costume among over 132 entries at the tenth annual Student Style Show held April 22 at North Carolina State College, Raleigh, N. C. This style show is sponsored by the Textile School and supported by the home economics departments of eleven North Carolina Colleges for women. It is held in connection with the Students Textile Exposition which has been an annual occasion at North Carolina State College for the last eighteen years.

Fabrics designed and woven by the textile students previous to the Show were supplied to the participants who made the material into evening gowns, sport ensembles and afternoon dresses. Each costume was then brought to Raleigh and modeled by the maker before an audience which taxed Pullem Hall to its capacity. The purpose of these events is to demonstrate to the public the high calibre work done both by the textile students and by the young women in the home economics departments of the cooperating institutions.

Following the colorful pageant, brief addresses were made by Dr. Frank P. Graham, president of the Greater University of North Carolina and by Dean J. W. Harrelson, administrative head of N. C. State College. Awaiting decision of the judges, Dean Thomas H. Nelson, director of the textile school, traced the growth of the division from the first graduating class of one person in 1901 to the present class of 60 students. He also mentioned that plans are being drawn up for a $60,000 addition to the textile building.

Immediately after presentation of prizes, the audience and participants visited the textile building, scene of the Student Exposition. There, all processes of cotton manufacture from the raw material to the finished product were demonstrated, and many interesting fabrics were on display. An informal tea was held for the visitors by Phi Psi fraternity.

The exposition was carried out under the direction of M. B. Payne, of Kannapolis, a member of the senior class and superintendent of the 1937 event. Election to this office is one of the highest honors a student can receive at N. C. State College.

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Personal News

Paul Rohr is in charge of finishing at Warren Woolen Co., Stafford Springs, Conn.

Pat Wofford, formerly head loom fixer at Commander Mills, Sand Springs, Okla., has been promoted to overseer of the day weaving department.

C. W. Willbanks, formerly overseer of spinning at Eureka plant of Springs Cotton Mills, Chester, S. C., has been transferred and promoted to superintendent of Springstein plant of the same company at Chester.

Thomas J. Kelley has been made overseer of finishing for Appleton Woolen Co., Reedsburg, Wis.

R. L. Hulsey is now overseer of carding at Edna Cotton Mill, Reidsville,

The Overseer's Corner

Chattanooga Golf Set for May 20 and 21

The Chattanooga Textile Group have set Thursday and Friday, May 20 and 21, as dates for their twelfth annual golf tournament and outing, to be held at the Chattanooga Golf and Country Club, Chattanooga, Tennessee. Officers and committees include: Wilbur S. Lawson, chairman; W. L. Jackson, assistant chairman; H. A. Rodgers, F. N. Belk, R. H. Griffith, invitation committee; Walter Forbes, Henry Crumbliss, prizes; Bud Johnston, Dudley Bryan, golf handicaps; H. O. Shuptrine, skeet shooting; Tom Moore, Claude Gott, baseball.

N. C. He formerly held the position of overseer of carding and spinning at the Mansfield Cotton Mills, Lumberton, N. C.

Anthony Olan has been placed in charge of the dyeing at Narragansett Finishing Co., Westerly, R. I.

Walter S. Pow, formerly of Amoskeag Mills, Manchester, N. H. is in charge of the cloth room for White Bros., Winchendon Springs, Mass.

A. Valade, formerly of Lakeport, N. H., is now overseer of carding with Root Mfg. Co., Cohoes, N. Y.

M. W. Parks, for the last several years overseer of spinning at Sylacauga, Ala., plant of the Avondale Mills, was recently appointed assistant plant superintendent.

John H. Shinner, formerly assistant overseer of the combing department of Wood Worsted Mills, Lawrence, Mass., has been advanced to the position of overseer.

L. G. Moss has become overseer of carding and spinning at Marshall Field & Co., Leakesville, N. C. He formerly held a similar position with the Pee Dee Mill No. 1, Rockingham, N. C.

Martin May is overseer of wet finishing in the Security Mills, Newton, Mass.

D. A. Mims, formerly overseer of spinning at Sycamore (Ala.) Mill of Avondale Mills, has been promoted to the position assistant superintendent of the plant of the same company at LaFayette, Ala.

George Callaway has been promoted from second hand to overseer in the cloth room of Eva Jane Mill of Avondale Mills, Sylacauga, Ala.

M. W. Parks, overseer of spinning at Eva Jane Mill at Avondale Mills, Sylacauga, Ala., has been promoted to assistant superintendent.

Lawrence Thompson, formerly of Joseph Bancroft & Sons Co., Wilmington, Del., has assumed charge of the pad dyeing in the Pacific Print Works, Lawrence, Mass.

G. A. Johnson, formerly of Atlanta, Ga., where he was associated with Atlanta Textile Machine Co., is now overseer of carding at the Sycamore, Ala., plant of Avondale Mills.

George Sexton has resigned as overseer of weaving, day shift, at Commander Mills, Sand Springs, Okla.

M. D. Haney has resigned as superintendent of the silk plant of mill No. 3 of Republic Cotton Mills, Great Falls, S. C.

H. C. Carraway, formerly second hand of spinning at Martha Mills, Thomaston, Ga., has taken a similar position with Sibley Mfg. Co., Augusta, Ga.

J. H. Crofts is now overseer of dyeing for the George W. Watt Woolen Co., Norristown, Pa.

E. F. Liner, formerly overseer of spinning at Avondale Mills, Sycamore, Ala., has been transferred to overseer of carding and spinning at Mary Ann plant of the same company at Stevenson, Ala.

James R. Wilson is now superintendent of Mary Louise Mills, Mayo, S. C.

J. L. Weinberg has been named overseer of knitting at the newly organized Kay Dunhill, Inc., mfrs. of sportswear, Mechanicville, N. Y.

Charles W. Mathews, James Sterling, Everett Symes, and **George Dunn** formed the entertainment committee at a meeting of Blackstone Valley Mills Association on April 26.

W. L. Graydon has been appointed superintendent of the carding division of the Upper Mill of Pelzer (S.C.) Mfg. Co.

J. L. Becknell has been promoted from loomfixer to second hand of weaving at Springs Cotton Mills, Plant No. 1, Fort Mill, S. C.

E. J. Willingham, formerly loomfixer, has been promoted to second hand of weaving at Joanna Cotton Mills, Goldville, S. C.

James M. Cathcart, Jr., son of the general manager of Anderson (S.C.) Cotton Mills, has been made assistant superintendent at Chiquola Mfg. Co., Honea Path, S. C. He is a graduate of Clemson College.

J. C. Godfrey has been promoted from second hand to overseer of weaving at Springs Cotton Mills, Plant No. 1, Fort Mill, S. C.

T. F. Blume is now with Highland Park Mfg. Co., Rock Hill, S. C., in the capacity of overseer.

Harmons for Harmony

The four Harmon brothers are reunited as members of the crack Cannon Mills Co. band at Kannapolis, N. C. J. S. (left front) and L. C. Harmon (right rear) are charter members of the band, which was formed in 1912. J. C. (right front) and W. R. (left rear) joined not long after, but W. R. left after the War. His recent return puts the quartette in action again. J. C. Harmon is production manager of Cannon Mills Co. and L. C. is superintendent of Plant No. 6 at Concord. W. R. is superintendent of finishing at No. 6, and J. S. is night superintendent at No. 10.

S. H. Jordan has resigned his position with Chadwick-Hoskins Co., Mill No. 2, Charlotte, N. C., and joined Wennonah Cotton Mill Co., Mills 1 and 2, Lexington, N. C., as general overseer of weaving and slashing.

Edward Gifford has been elected president of Textile Designers', Analysts', and Technicians' Association, Fall River. Other officers are: **Peter Wayner,** vice-president; **Oliver Bodeau,** secretary; and **William Savicki,** treasurer.

W. J. Buckner has resigned as second hand of the card room at Stonewall (Miss.) Cotton Mills, Inc., to become connected with Chadwick-Hoskins Co., Mill No. 5, Pineville, N. C., in a similar capacity.

A. L. King is now overseer of weaving at Monroe (Ga.) Cotton Mills. He was formerly in charge of the weave room on the second shift at the Manchester, Ga., plant of Callaway Mills.

W. H. Hand has resigned his position as dyer with Wrenn Hosiery Co., Thomasville, N. C., to become southern representative of Geo. E. Sherman Co., Brooklyn, N. Y.

M. D. Collins, for the last two years overseer of weaving at Eagle & Phenix Mills, Columbus, Ga., is now overseer of weaving at Durham (N. C.) Cotton Mfg. Co.

Henry Childress has become overseer of carding at Crescent Mill, Belmont, N. C.

Hal T. Gilbert, Jr., has been appointed overseer of the weaving department of the Lindale, Ga., plant of Pepperell Mfg. Co. He has been serving as head of this department at night, and has been promoted to head of the entire department.

The Overseer's Corner

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Questions & Answers

Streaks in Silk Fabric

Technical Editor:

I am inclosing a sample of silk, which contains light and dark streaks warpways. The warp is supposed to be made of 85% Japan stock, and rayon filled. Can you tell me the cause of this defect and suggest a possible remedy? (8358)

Examination of this sample discloses several possible causes for the streaks. In the first place, we find that there is considerable variation in warp stock. Apparently the various types of warp ends have been grouped together, as the streaks due to this variation in stock are distributed evenly throughout the fabric. We suggest, therefore, that you watch your warp stock closely to avoid use of mixed lots. We suggest also that you check the tension on your winders to make certain there are not some bobbins which are running soft. Further, check your warper creel to make sure that all your bobbins are rotating freely. At times some of the bobbins have a tendency to bind, causing tight ends, and, consequently, streaks in the fabric.

Distorted Stitches in Full-Fashioned Hosiery

Technical Editor:

To settle a dispute, I am sending you two crepe stockings; one finished and the other in the gray. What is your opinion as to the cause of the small distorted stitches which I have circled with the blue chalk? (8431).

Examination of these samples shows that the big loose stitch is robbing the adjoining wales of their proportionate amount of thread. It is possible to take a snagger needle, work the surplus silk in the big loop back into the adjoining loops, make a perfect wale, and completely correct the defect.

We note also that there are several of these stitches scattered over the leg in the gray stocking, indicating that the machine needs a general overhauling. We cannot state definitely the cause of the loose stitch; but it appears that a rough nose on either a sinker or divider is holding the stitch too long before casting off to the needle to form the stitch. There is no question that there is a lack of coordination of the stitches forming parts at the time the unbalanced stitch is formed. With these hints, we feel certain that an experienced machine fixer will have no difficulty in locating the exact cause of this defect.

Static in Warping Silk

Technical Editor:

In the January issue of TEXTILE WORLD, Overseers' Corner, we notice an article advocating the use of cords and weights to prevent the yarn coming over the front roll from spreading when overlapping due to static.

This we do not consider good practice, since the bridle, resting on the ends and not the roller itself, will let the roller move faster than the ends and tend to create added tension on the warps.

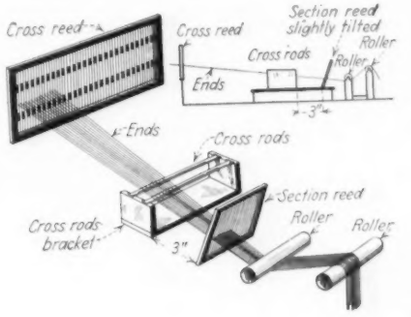
There are scientific machines made to eliminate static, which, while not so inexpensive as the bridle scheme described in this article, will more than pay for themselves in the better warping conditions they insure. S. M. FERRER

Warping Satins

Technical Editor:

We are warping single-end satins, both dry and soaked silk. We find that the soaked silk sticks badly in passing through the full cross on the warper, whereas the dry silk runs satisfactorily. We are now running from a 1,000-end creel to the crossing, through a 50-dent front reed, thence through the full crossing over the pressure roller, and under the top roller onto the mill. Kindly send us a sketch indicating how you would run this job, showing position of front reeds, glass bars, etc. (8378)

Unsoaked silk run through a 50-dent reed into a full cross must be very clean and of exceptional quality. A coating of hard gum is responsible for the success you are having with it. The soaked silk is naturally a little rougher and weaker, especially if it is of a soft nature. It is only logical to expect a certain portion of the soaking material to cling to the threads, also some of the gum to loosen and reseat itself after the silk is dry. Under the microscope, these ends show a very ragged surface. A substantial rate of speed through a 50-dent reed creates a considerable amount of friction. After the threads pass through the reed, they are called upon to suffer the additional friction of a full cross, and this is responsible for some trouble. The best way to run silk with a full cross is shown in the accompanying sketch.



The arrangements here are reversed, but the same benefits are derived with decidedly less trouble. Usually a home-made bracket has to be made to hold the cross rods. This is placed about 3 in. behind the section reed.

It is impractical to use a 50-dent reed for warping purposes. A 33-dent reed has been found to meet all the requirements for ordinary silk warping. In all warping it is well to tilt the section reed forward a trifle. This permits slugs and waste to slide through the reed with an upward motion.

Two Shades in Hosiery

Technical Editor:

You will note that the inclosed two stockings are two different shades although they are knit from the same

The Recreational Band of Botany Worsted Mills of Passaic, N. J., marched in second position in the Army Day Parade at New York City, April 10. This famous band led the Military Order of the World War, sponsors of Army Day. Colonel Chas. F. H. Johnson, president of Botany Worsted Mills and a member of the general staff of the M. O. W. W., was chairman of the 1937 Army Day Program Committee.

lot of silk and dyed in the same dye bath. We have experienced this difficulty in our 4- and 6-thread hose for some little time and, although we have checked the problem from many angles, we cannot seem to find the reason for these two distinct shades occurring in the same batch. Any information you are able to give us on the subject will be greatly appreciated. (8418)

After stripping and redyeing, the two stockings still show two distinct shades, indicating that the trouble is not in the dyeing. One of the stockings has a tighter knit, is heavier, and has a duller finish than the other, giving evidence that the silk in the two stockings is of different character. To confirm this opinion, you might send samples of the hosiery showing the difference in shades to one of the testing houses for a complete analysis of the silk. In the case of goods which are already knit, about all you can do is to separate the two shades after dyeing.

Winding Velvet Carpeting

Technical Editor:

We are having considerable difficulty in winding rolls of velvet-type carpeting with rubber back. We are winding this in the usual way; that is, the steel core center with paper tube on the steel core. The carpet winds up tight enough and straight enough as far as going through the winding machine; but as the roll builds up, for some unknown reason, the carpet creeps in the center along with the steel core and forms a cone shape. This happens perhaps to five out of every ten rolls that we wind, necessitating winding up of the roll after we take it from the machine and retightening on the floor by hand, which is proving very unsatisfactory, and furthermore, does not give us a tight roll. We shall appreciate it if you will give us some idea as how to overcome this difficulty. (8410)

The telescoping of rolls of velvet carpeting is an inherent condition, due to the pull of the blade in the cutting in the weaving process being all in one crosswise direction, thus causing the pile to be somewhat out of the perpendicular, mainly toward one selvage. In rolling, the compression of the pile tends, therefore, to cause the condition described in your inquiry.

It is frequently recommended that rubber and other backed carpets, be rolled with the pile toward the outside of the roll, as in the subsequent unrolling and laying, the carpet will not curl up at the ends, but will lie flat. This also facilitates rolling, by bursting the pile, rather than compressing it, due to its being on the outside of each lap of the roll rather than the inside. The disadvantage of this procedure, of course, is that the outside lap is always liable to soiling unless protected.

The only other method we know of controlling the shape of the roll is to vary the tension guides in the rolling machine until the most suitable position is found.

Dyed Silk Chafed

Technical Editor:

We are inclosing herewith a sample of some purple silk which we redyed into a navy. You will notice that the surface appears to be chafed. Will you kindly tell us if there is any way we can eliminate these marks? The material was redyed without the original color having been extracted. (8404)

The surface of the goods is not only chafed, but the warp and filling have shifted somewhat, giving the goods a reedy appearance. This is all due to too much mechanical action on the goods during the dyeing operation, and the defects might have been present to some extent before the goods were dyed the second time. The appearance of chafing is due to a splitting of the loose ends of fibers into as many as 20 fine fibrillae. When these are quite short and close to the surface, they give a smoky, chalky haze to the goods; but when they are longer, they curl up on themselves and produce what are known as silk lice. The only way to improve the appearance of the goods is to run the pieces through a rubbing machine, as is done with satins. In this machine, a revolving felt-covered roll, with a light dressing of oil, brushes the tiny fibers down and makes them adhere to the goods, and thus eliminates the hazy effect.

Tight and Broken Picks

Technical Editor:

We shall appreciate your assistance on the following problem: Inclosed are two quills made on a Universal winder with bunch builders for slip feelers. On yarns of 100-denier or less, rayon or acetate, when the quill is almost finished, the thread sticks and makes tight picks on the cloth, or may even break. We have run these quills five winds, as well as seven winds, per inch in the quilling, and have lined the spindles in the shuttle to no avail. We are trying to keep the tension in the winding at a minimum. (8370)

Examination of the quills discloses nothing wrong with either the yarn or the quilling, although rough spots on two of the quills themselves might have some tendency to cause the thread to pull hard. It is more likely, however, that the basic cause of your trouble is at the loom. Sometimes the slide feeler will cause this difficulty if it is not in the correct position or is hitting the quill too hard. We suggest that you move the feeler back as far as possible. The mechanical feeler does not require much pressure. Other possible causes are faulty pickers, improperly bent binders, and too much drag on the fur.

Cotton Cloth Wavy

Technical Editor:

We are having trouble with wavy cloth and wrong picks with the right gear. We have checked the gears, tin roller, harness, whip roll, let-off, and take-up. Kindly give us your recommendations. (8439)

You do not state what kind of material you are using, what kind of fabric you are weaving, or what kind of loom is giving you trouble. We assume from your address, however, that you are at least weaving a cotton fabric; and, based on this assumption, we are glad to suggest some possible causes of the trouble. No doubt some of the suggestions will not apply to your particular case, but you should have little difficulty in eliminating any that are not applicable. One cause or a combination of causes may be found responsible. Furthermore, in spite of the fact that you have checked some of the faults mentioned, a brief explanation of them may be appropriate:

1. Uneven yarn. This is self-explanatory.

2. Faulty let-off. A friction let-off may cause wavy cloth through rough friction drums; crooked beam gudgeons; chain, rope, or band running on beam-drum flanges; and poor or unbalanced beams. An automatic let-off may cause wavy cloth through incorrect adjustment of the let-off.

3. Faulty take-up. This may cause waviness through binding gears, worn gears, poorly manufactured eccentric gear, slipping clutch or take-up pawl, cloth creeping on the take-up roll, and take-up roll not turning freely in its bearings.

4. Too light a loom. This would create vibration, particularly in the lay, and cause wavy cloth.

5. Worn rocker shaft. This may allow the lay to jump now and then at the beat-up and the pick is rolled in.

6. Loose crank arms. This will permit the momentum of the lay to act more or less on the beat-up, causing the filling to be beaten up unevenly.

7. Worn crankshaft boxes. Same as under No. 6.

8. Too much rise of the warp line. If the warp stop motion and the whip roll are raised too high in order to get cover, wavy cloth will sometimes result.

9. Too rough a breast beam. If the breast beam is worn and the cloth goes over a large, rough surface, the tension of the cloth will make it adhere to the breast beam and it will be taken up intermittently when the tension becomes great enough to overcome the friction. To remedy this, a glass-smooth surface should be provided for the cloth to ride over.

10. On some looms where wooden breast beams are used, these frequently become loose and move a trifle for each pick. As this is an uncontrolled motion, it may be the cause of wavy cloth.

11. Improperly adjusted picking motion. If this does not pick smoothly, it will set up a terrific pounding, and the jar will cause the beam to jump ahead at intervals.

12. Worn and improperly meshed driving gears. This fault will have the same effect as under No. 11.

13. Slipping loom belt or friction clutch. This is another uncontrollable motion and will cause variation in the speed of the loom. Any uncontrollable motion is likely to cause wavy cloth.

14. Poorly made warps. This is self-explanatory.

With reference to your statement about wrong picks with the right gear, this should not cause any worry, provided the condition is not due to a faultily working take-up or to excessive slippage of the cloth on the take-up roll. In figuring out a gear for a certain number of picks per inch, one must take into consideration the fact that a certain percentage of slipping cannot be avoided. This usually is around 2%, and to this must be aded another 2 or 3% for contraction of the cloth after the tension is removed. The slipping and contraction differ for different fabrics; and it is quite possible that the right picks are obtained on one kind of fabric, while other fabrics of different character may come out under- or over-picked. The solution of this problem is to use a gear that will give the correct number of picks per inch. Of course, there must not be any uncontrollable cause for this condition, such as, for instance, slipping gears, excessive slippage of cloth on take-up roll, etc.

New Machinery and Processes

Dyeing Machines

• Well known as a manufacturer of hosiery and skein dyeing machines and mercerizing equipment, Smith, Drum & Co., Philadelphia, introduced, at the Southern Textile Exposition, two entirely new additions to its line—a piece-goods dyeing machine, and a package dyeing machine.

The piece goods dyeing machine is of the reel type, with reel constructed of heavy-gage stainless steel, electrically welded and riveted into a solid unit on a stainless steel shaft; ribs are specially shaped to provide a good grip without damaging the material; spacer sheets between the ribs and the center shaft prevent catching or snarling of the goods. Tank is also of stainless steel, with all seams electrically welded; this is supported at each end by heavy cast-iron frames. A perforated false front of stainless steel, mounted inside the tank, protects the goods from the stainless steel steam pipes, the rubber-seated drain plug, and any concentrated dye from the dye feed line. The carrier roll is constructed of heavy steel pipe covered with stainless steel. When specified, a rubber-covered nip roll is furnished. The nip roll can be raised and lowered by means of a conveniently placed handwheel. The pin rail is entirely of stainless steel. The stainless steel unloading reel is driven by chain from the main drive, through a jaw clutch, when in operation. Machine may be either motor or belt driven. Motor drive is of the worm and gear type, and motor can be either single or two speed. The machine is completely equipped with thermometer, dye feed bucket, water gage glass, water inlet, and steam connections. When specified, the machine is inclosed with a stainless steel hood, equipped with sliding type doors both front and back. Each door is fitted with glass windows and is counterbalanced for easy raising and lowering.

The package dyeing machine consists of pressure dye tank, expansion tank, pump, yarn carrier, carrier rack, and control panel. The dye tank is built of heavy stainless steel, with all seams electrically welded; it is equipped with a balanced hinged cover in which is fitted a sampling chamber of special design. Expansion tank is of open-top design and is constructed of stainless steel; it is connected through a stainless steel, automatically controlled, four-way valve to the dye tank by means of stainless steel piping. Carrier is also of stainless steel and is specially designed, with the manifold so placed that packages can be arranged on both the top and under sides. This permits handling, in effect, four packages above each other, but at the same time provides a greater flow than is possible if all four are mounted on one spindle. The manufacturer states that this arrangement is nearly 50% more efficient than certain other arrangements frequently employed. The motor-driven pump is of stainless steel throughout and is specially designed to deliver the necessary flow to the dye tank, with ample reserve; special features reduce to a minimum the danger of the pump becoming clogged or air bound. The control panel consists of a pressure gage, time clock, two lights, a push-button station, and a recording thermometer with special chart.

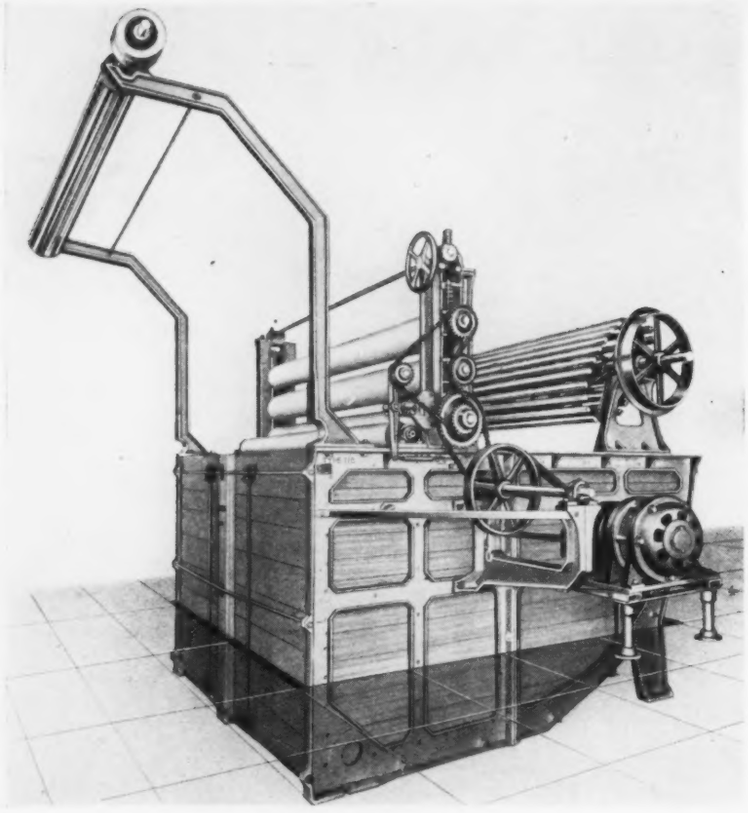
SHUTTLE CLIP

Flat-Bobbin Shuttle

• To insure a firm grip on flat bobbins without any necessity for forcing them into tight shuttle clips and thereby risking their being damaged, Watson-Williams Mfg. Co., Leicester, Mass., has equipped a new shuttle with the expanding ear clip illustrated herewith. The clip is fast to the spindle and is raised when the spindle is pulled up. In such position the clip is expanded and the bobbin can be placed in it without pressure being exerted; and when the spindle is pushed down, the clip is closed on the bobbin by the squeezing effect of another clip embedded in the shuttle. The desired horizontal position of the flat bobbin is maintained by the tongue at the base of the spindle, which fits into a groove at the

PACKAGE DYEING

PIECE DYEING



ROPE SOAPER

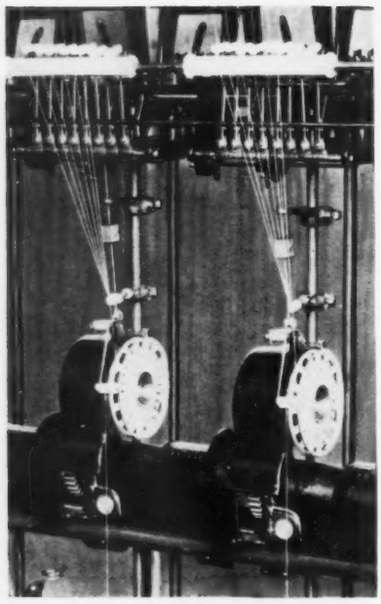
The scutcher is made with either a single, brass guide roll or a pair of Rubfelt draw rollers, depending upon whether the cloth is to be drawn through the machine by the scutcher itself or by a water mangle or other machine. One of each pair of gears is made of cut Phenolite and the other of cut cast iron. All gears and pulleys are keyed and all bearing brackets are doweled to place.

Rope Soaper

• A machine for soaping cotton and rayon fabrics after printing, and for bleaching certain classes of fabrics, has been developed by Riggs & Lombard, Inc., Lowell, Mass. It has one or more compartments through which the goods travel spirally. Among the design features is a triple nip stand which effects a double squeeze of the fabric. The rolls of this stand can be utilized to run in tandem or to give the fabric a double S turn (wrapping around the rolls 50%).

A stainless-steel trough under the squeeze rolls collects dirty water and drains it off to one side, from where it can be sent to the sewer or back to an earlier compartment to be used over again on dirtier cloth.

The tub is comparatively shallow vertically, but deep from front to back to secure smooth handling of the fabric and minimum lifting strain. The soaper can be furnished in cypress or in stainless-steel construction with any type of reel and any arrangement of rolls desired.



FEED

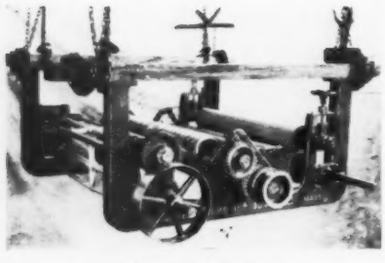
base of the bobbin. The shuttle is fiber-clad with dogwood base.

Watson-Williams also announces that the tensions in its bobbin-changing shuttles are now equipped with bushings and screws in place of the sliding pad formerly employed, and that its new brass eyes are forged for smoothness, rather than sand cast or die cast.

Feed Wheel

• For use on the company's 5B doubler twister, Atwood Machine Co., Stonington, Conn., has designed a new feed wheel. It may be applied to existing as well as new installations and has a corrugated surface that is said to assure positive delivery for both *S* and *Z* twist. The manufacturer states that the feed wheel performs with equal efficiency on all sizes of yarn, two thread or multiple thread, and is especially recommended for the high spindle speeds and turns per inch that now prevail.

With the new feed wheel, only one lap is required and no thread separator is needed. The porcelain thread guide acts as a knock-off, operating the stop motion in case of thread breakage between feed roll and spindle and preventing roller laps.



SCUTCHER

Ball-Bearing Scutcher

• Birch Bros., Inc., Somerville, Mass., announce a heavy-type ball-bearing scutcher in which the frames are made integral with the hangers which support the machine from the ceiling. Shafts are of large diameter and fitted with self-aligning ball bearings, housed and sealed to prevent grease leakage. The spirals are of heavy construction, and the governor is ball bearing throughout.

New Print Blanket

• As the culmination of ten years' work on the project, Dewey & Almy Chemical Co., Cambridge, Mass., have developed a new kind of print blanket with an embossed surface which permits the complete elimination of back grays. Neither is it dependent upon the careful lapping on the cylinder to conform to the width of the cloth being printed.

The blanket is made from latex-impregnated fabric. Its construction includes an especially embossed surface reinforced in such a way that the indentations do not collapse or flatten under the heavy pressure applied by the engraved print roller. This permits the elimination of the back gray, for the blanket always supplies sufficient storage voids to pick up and carry away the surplus color which strikes through the cloth being printed or which extends beyond its selvages. As soon as the blanket leaves the printing position, it is thoroughly washed and dried on each revolution.

With this new print blanket close register is not considered, as the embossed surface picks up the excess color and carries it away in the same manner as back grays. There is no squeeze-roll ball of color accumulating at the selvage edge of the cloth being printed and therefore no flushing of color along the edges.

In order to insure the complete success of the blanket, a new washer and dryer have been developed. Dry cans are eliminated and excess temperature is avoided, which greatly increases the length of life of the belt surface.

In this new machine the dye-covered belt is first water-washed and then passes past an air-blast chisel, which removes the bulk of the free surface water. The blanket

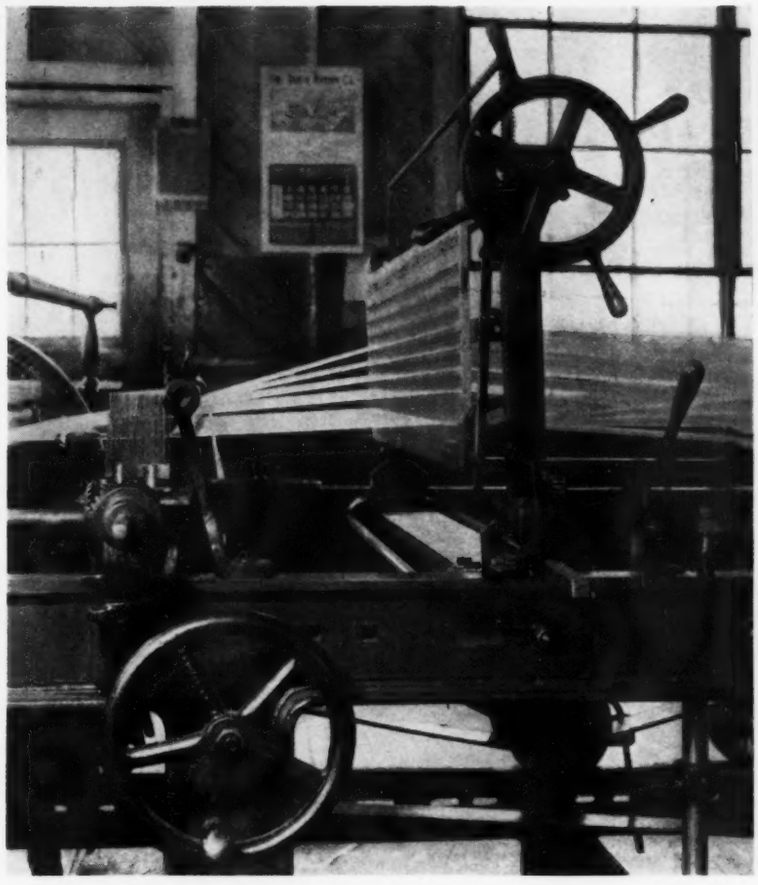
then passes through an air-drying compartment in which all remaining water is removed at a low temperature. Operating speeds of up to 120 yd. per minute are possible. In the silk and rayon printing industry this new development is said to offer savings in reducing the expense of the dyes used.

Leasing Device

• Since a lease in rayon warps permits the yarn to run straight into the harness, and thus facilitates the manufacture of higher-quality fabric at an increase in production, the Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia, has introduced an ingenious leasing arrangement to be applied to the backs of cotton slashers handling rayon. Employing a multiple-hook reed, this invention, known as the Stehedco leasing device, makes possible the producing of a lease in 2 to 3 min., as against the 20 to 30 min. required to do the work by hand.

From one side of each reed wire project six hooks located one above the other. The dark lines which may be seen extending across the reed in the photograph are the six horizontal rows formed by these hooks. The hand wheel shown at the top is for raising and lowering the reed; and the handle below it, slightly to the right, is for moving it sidewise. For entering the warp, the hook reed can be hung close to the comb, and the top opened, so that the warp can be laid in the reed and comb at one time. Twelve-beam warps can be handled. The split rods are moved within a few inches of the reed to prevent rolling.

An end from each beam is placed in each dent of the hook reed; and in starting position there are two such ends between each vertical pair of hooks. The reed is first shifted in the direction which will place all ends against the plain sides of the reed wires, and then is raised until the ends from the uneven beams are passed by the hooks. Next the reed is shifted so that the ends rest against the hook side, and a slight raising of the reed serves to catch the even-beam ends in the hooks. A shifting to the plain side now leaves the even-beam ends in the hooks and permits the odd-beam ends to clear them upon the subsequent full raising of the reed. At this point the first lease rod is inserted by the operator. Then the reed is returned to starting position and the operation repeated to catch the even-beam ends and raise them to permit insertion of the second lease rod.



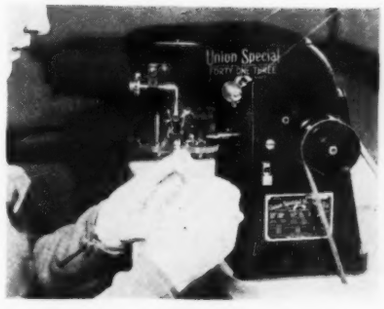
LEASING DEVICE

Hosiery Seamer

• Speeds 35 to 40% higher than the older model are a feature of the new cup-feed sewing machine—designated as Class 41300 (Forty-One-Three) and intended for closing the back seams on full-fashioned hosiery—just announced by Union Special Machine Co., Chicago.

Cutting along seams has been virtually eliminated because of the positive feeding mechanism, it is stated. The feed-cups are suspended from above and are driven by spur gears attached directly to the feed-cup shafts. In addition, the cups are placed at a slight angle whereby the left-hand cup is positioned in advance of the other, offering better visibility of the work and a more comfortable position for the operator.

The increase in speed has been brought about through simplification of the mechanism and improved lubrication. The looper, for example, has only four motions. Lubrication is provided by a disk which revolves while partially submerged in oil, thus throwing a constant spray of oil over the entire mechanism. All moving parts, except the disk, are above the oil level so that the oil is subjected to less severe treatment. The mechanism is completely sealed in a dirt-proof housing. The machine has been designed so that, by a slight change of adjusting parts, a three-thread seam can be produced.



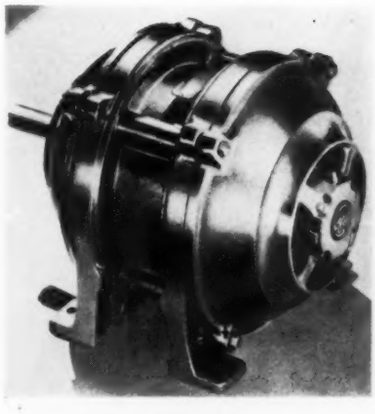
SEAMER

Screenless Textile Motor

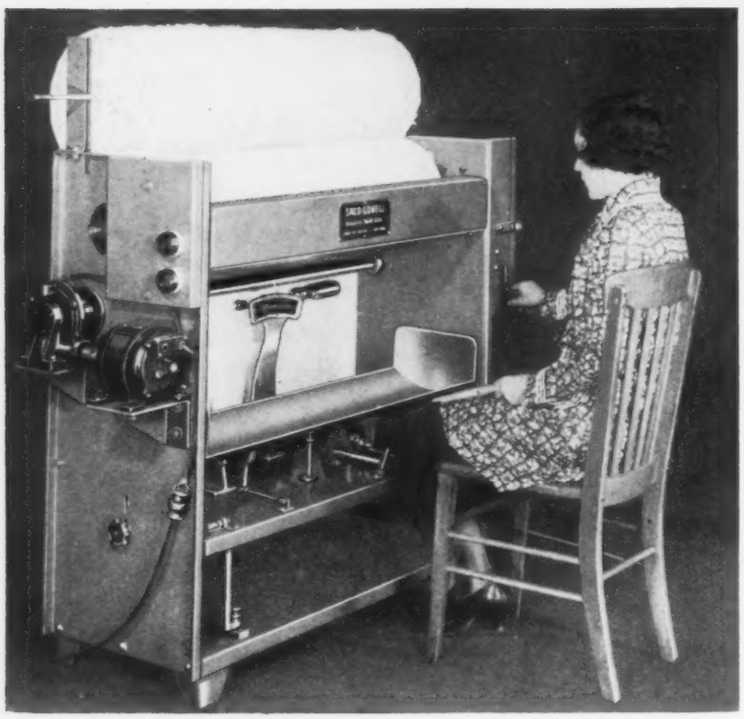
• Several novel design features are incorporated in a new screenless open motor announced by General Electric for textile service. The ventilating system of the new motor is designed with particular attention to positive lint expulsion. Any free lint or dust in the ventilating air is forced through large, unobstructed air passages and is discharged through large openings in the stator frame. Features stressed by the manufacturer are the size of the air inlet and discharge openings, the smooth contours of the air passages, and the unique design and location of the fans.

The motor is furnished with an indestructible rotor with a cast-aluminum winding, and smooth, solid end rings. The coils, which are of the random-wound type, are said to be compactly and uniformly wound to help provide a clear air passage between them and the end shield.

The end frames are of malleable iron and the outer and inner rings and cross-



MOTOR



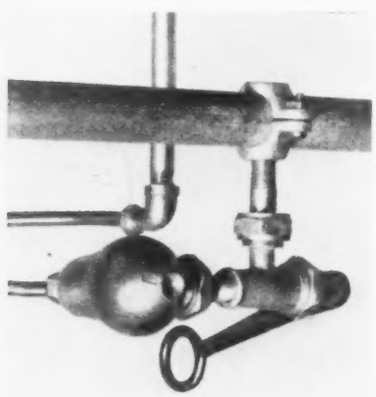
LAP METER

pieces form an arched truss. Inside surfaces are smooth, and the clearances are of generous size to assure easy passage of lint. The winding insulation is resistant to oil, mild chemicals, and moisture.

Turbo-matic Humidifier

• The Turbo-matic humidifier developed by Parks-Cramer Co., Fitchburg, Mass., couples the self-cleaning feature with the turbo principle of atomizing. Simplicity of construction is featured. The travel of the two movable members is accomplished by a single Turbo-pyro diaphragm of large diameter which is copper "selvaged" at its edges. Turbo-pyro is described as a new, non-cracking, oil-proof composition designed to minimize diaphragm troubles.

The head is so designed that the water nozzle is self-centering, and no leakage of compressed air into the water line can occur. Action is stated to be so positive and instantaneous that no dripping takes place. When the air is shut off, the head stops instantaneously, and in the act of shutting off (and starting again) the air and water orifices are automatically wiped clean. The Turbo-matic humidifier can be installed on any standard atomizer system.

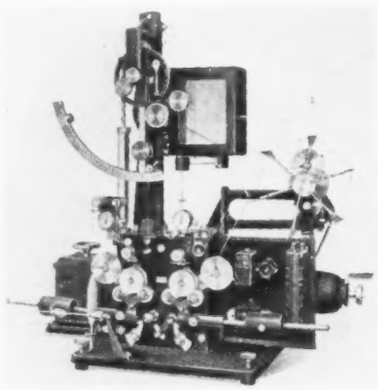


HUMIDIFIER

Universal Machine for Testing Yarn

• Evenness, elongation, elasticity, and strength of the running thread can be determined by a single testing operation, according to Guido Hahn, Grüna, Saxony, Germany, maker of a universal testing machine which is being marketed in this country by Frederic W. Glardon, 90 West St., New York.

With the new instrument, it is said to be possible to determine the following properties: lower strength limit; the number and distribution of thread breaks which occur when, for example, 1,000 yd. of yarn is subjected to a definite stress; total elongation and elastic elongation when the thread is subjected to a tension which lies below the breaking load; lack of uniformity of the yarn in regard to strength and elongation, in the form of a diagram which can be evaluated in figures; sliding resistance, plotted on a chart; resistance of the yarn as it is being drawn off bobbins or packages, plotted on a chart.



TESTER

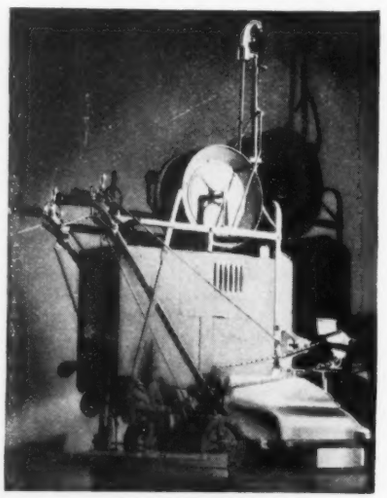
The operation of the instrument and the evaluation of the results are said to be equally simple. The yarn that has been tested is taken up by a counting reel, from which it can be easily lifted out in order to determine the count or the regain.

Cotton-Lap Meter

• For analyzing cotton laps yard by yard, Saco-Lowell Shops, 147 Milk St., Boston, has developed an ingenious lap meter. The lap to be studied rests on a drum, 1 yd. in circumference, located at the top of the machine. As the drum revolves and the lap unwinds, the sheet of cotton passes downward through two pairs of small-diameter rollers, located behind that part of the casing which bears the name plate, as shown in the photograph. When the drum has made one revolution and thus measured 1 yd., the upper pair of rollers stops and the lower pair continues to turn, tearing the unwound yard free and dropping it into a scale pan below. The operator then releases the delicate swing-balance mechanism and records the weight indicated. The girl sits in a chair in front of the machine and, as the unwinding yard hangs before her, inspects it by means of light transmitted through the cotton from behind.

Electric Floor Scrubber

• Finnell Systems, Inc., Elkhart, Ind., now have a giant model of their cleaning machine which has a cleaning-water capacity of 12 gal. It applies clean water to the floor, mixes it with scouring powder, scrubs the floor, rinses it, and draws the dirty water into a waste tank. It is fitted with four electric motors and propels itself. The driving clutch is operated by a grip lever on one of the handles, similar to the grip levers common to bicycles.



SCRUBBER

Payroll Typewriter

• A new payroll typewriter, equipped with a wide carriage and other special features,

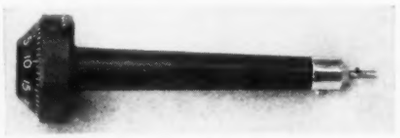
PAYROLL

is now being marketed by Burroughs Adding Machine Co., Detroit, Mich. It is designed to enable small- and medium-sized concerns to meet Social Security report requirements efficiently and at low cost. The typewriter writes four records —employee's statement, earnings record, pay check or envelope, and payroll journal —at one time and in a fraction of the time required by pen-and-ink methods. It offers the advantage of electric carriage return.

Payroll forms are handled with ease and speed. The wide journal sheet is inserted first around the platen and faced with a carbon sheet of equal width. Employee's statement and pay check or envelope, and the individual earnings record are aligned and inserted, as a unit, in the machine. Insertion is facilitated by the journal rack, while the feed roll bail keeps the journal in position. Details of the employee's statement (his receipt) appear, at one striking of the typewriter keys, on the statement, the earnings record, and the journal. Tabulating to the check position, the operator then writes the employee's check and a check register, which composes the right side of the permanent payroll journal.

Tension and Strength Tester

• Convenience, speed, and accuracy are asserted by Toledo Scale Co., Toledo, O.,



TESTER

to be the features of the Microdyn, a tension and strength tester. The instrument is only 4 13/16 in. long and can be readily carried to the job.

In operation, a forked shaft is rotated by the pull of the thread which is wrapped around it. The force of this pull is measured by a steel torsion spiral which resists the rotation of the shaft under load and the result is shown on a dial at the head end. The relation of the size of the forked shaft to the dial gives a thirteenfold multiplication of the force. At the forked-end spindle, the load is carried by anti-friction ball bearings riding in a case-hardened ring. All thrust is carried on a similar thrust bearing in the head-end of the shaft.

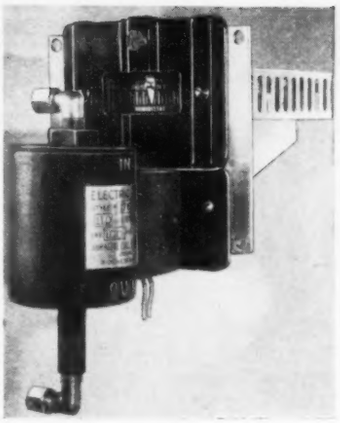
There is a Hi-Lock stop indicator which permits measurement of transients and maxima—such as the breaking point of thread—where a maximum is reached and the load immediately falls off. The standard dial has a capacity of 50 oz., with 1-oz graduations.

Scroll Rolls for Scutcher

• Thomas Leyland Machinery Co., Readville, Mass., has placed on the market a new scroll roll for scutchers. The rolls are manufactured with a spiral curve or slot in the brass roller. Into this slot a ribbon of brass is twisted or screwed to form the scroll, exactly in the same way that a bolt is screwed into a nut. The purpose of this type of construction is to prevent the scroll from being turned over by a knot or a thick place in the cloth, forming a cutting edge which would injure the fabric.

Humidity Control

• Combination of a Supreme solenoid water valve and a Friez insertion humidistat into one unit has been announced by Supreme Electric Products Corp., 99 Mt. Hope Ave., Rochester, N. Y. The electric valve is especially designed for humidity application. It has a cast-iron base with terminal chamber for BX connections.



CONTROL

Installation of the unit is simple, and only one electrical connection is necessary. Several types of Supreme spray nozzles, with self-cleaning orifice, can be used to supply humidity.

Cot-Splitting Machine

• United Shoe Machinery Co., Boston, is now offering to the general market a cot-splitting machine that was developed several years ago for a few mills. The machine is designed to split leather cots for covering rolls and features precision and speed. The feed mechanism is adjustable and the thickness can be controlled by the operator. An automatic knife-grinding attachment keeps the cutting blade in condition.

NEW DYES & CHEMICALS

General Dyes

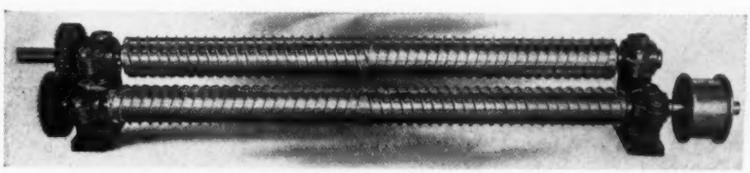
• General Dyestuff Corp. announces the following new products: Diamine Orange BA, a direct dye suitable for application to silk and cotton unions and of particular interest for hosiery dyeing; Diazo Brilliant Scarlet 3G, a homogeneous developed color producng brilliant scarlet shades when diazotized and developed with Developer A, and clear reddish orange shades when developed with Developer ZA.

Du Pont Products

•E. I. du Pont de Nemours & Co., announces the following new products; Celanthrene Green BS, an acetate dye giving bluish green shades of general satisfactory fastness; four new Pontamine dyes—Diazo Orange RFW, Diazo Red BFW, Diazo Scarlet GFW, and Diazo Scarlet FW—all developed colors having superior fastness to washing and ranging in shade from a bright reddish orange to a blue-red when developed with beta naphthol; Pontamine Brilliant Violet BN, a direct color producing brilliant bluish shades of violet which are dischargeable in the usual manner.

Wool Lubricant

• Development of a synthetic product for use in the worsted industry as a stock lubricant has been announced recently by E. F. Houghton & Co., Philadelphia. This material, known as Houghto-Olive E, is said to be 100% saponifiable and, therefore, readily scoured from the material. Other advantages cited are staple source of supply and price, constant physical properties, easy to apply, penetrates rapidly and evenly, does not cause colors to bleed.



SCROLL ROLLS

Bactericide for Air Conditioning

• Development of a new chemical to be used in conjunction with air conditioning systems has been announced by Oakite Products, Inc., 22 Thames St., New York. This product, which is known as Oakite Airefiner, is used to

sterilize the recirculated water used in scrubbing the air for the purpose of preventing contamination of filtered air by bacterial organisms, eliminating slime growth on those surfaces in the equipment which are constantly in contact with water, and eliminating odors from air which has been conditioned. The material is soluble in water and is said to be non-corrosive to metal surfaces, nontoxic, odorless, and colorless. The new chemical is also recommended by the manufacturers for use in large tanks which hold emergency supplies of water for a considerable period and for preventing fouling of water stored in wooden vats or tanks, where water is used to prevent shrinkage of the wood.

NEW PUBLICATIONS

The Story of King Cotton; by Harris Dickson; Funk & Wagnalls Co., New York; $2.50.

The best tribute we can pay to Mr. Dickson's book is that no person will know too much about cotton to want to read it, and no person will know so little about cotton as to be unable to understand and appreciate it. He has taken the story of this age-old fiber and has preserved all its glamor without the least sacrifice of the truth.

After sketching in the background of the early history of cotton, and the contrasted methods of cotton growing in foreign countries, he writes of the problems of today, the mechanical cotton picker, the menace of the boll weevil and the method by which the South is ridding itself of this peril, of share cropping and government intervention.

But this outline gives no hint of the color and drama which the author brings to his subject. He personalizes cotton's kingdom by presenting "those who set him up": Colonel Darius Woodville, a type of cotton planter who lived before and just after the Civil War, and George Washington Johnson. "While he lived Cunnel Rye usually moved two feet ahead of his shadow, George Washington Johnson, colored," says Mr. Dickson in his preface. "The Colonel has gone, but Wash is still with us, indolent, good-natured and improvident, the same old Wash, unchanged and unchangeable through the ages. These men made the Romance of Cotton, and faced its grim reality."

Now go on with the story.

James Talcott, Merchant, and His Times; by William Hurd Hillyer; Charles Schribner's Sons, New York; $3.00.

To this reviewer Mr. Hillyer's book serves two purposes. First, it tells the story of James Talcott, merchant, and—through him—the story of that group of great merchants who, as the author states, did much to prepare the setting for the present-day scene. That, of course, is the primary objective of the book. The narrative covers particularly the 60 years of James Talcott's active business career, from 1854 to the outbreak of the war in 1914, the most momentous and changeful period in modern history.

But the book does something else. It resurrects nostalgic glimpses of the picturesque world of those old New York merchants.

A monument to Mr. Talcott's work continues on in the form of James Talcott, Inc., of which his son, J. Frederick Talcott is president and Mr. Hillyer, the author of the book under review, is assistant vice-president.

Incidentally, the volume merits praise not only for its content but for its appearance. Not often is a book so satisfying a one to read, from both standpoints.

Public Papers and Letters of Oliver Max Gardner, Governor of North Carolina, 1929–1933; published by North Carolina Historical Commission, Raleigh, N. C.

The zone of interest of this book extends far beyond the State of North Carolina. Particularly to the textile industry does its appeal ignore State lines. Governor Gardner, through his own experience as a textile manufacturer and through his present affiliation as counsel for groups within this industry, is very definitely a part of it.

His papers and letters, during his governorship, well reflect the stature of the man, and his zeal for honesty and sanity in government. They also reveal the same independence of thought which makes him such a valuable adviser to an industry today, even though some members of that industry may occasionally have difficulty "taking" his advice.

Prominent among his correspondents was B. B. Gossett, textile manufacturer of Charlotte, N. C. Letters from and to Mr. Gossett and other men in the industry serve to heighten the textile interest of the book.

Labor's Search for More; by Malcolm Keir; Ronald Press Co., New York; $3.50.

Our immediate national problems mostly are social; the experience of our business executives in production is inadequate; they therefore must supplement their own experience with broader studies. This is the author's reason for writing this book. Wise executives, he states, will try to learn in advance what the majority of our people want; therefore it is essential to know something of the struggles of ordinary persons to improve their lot. "That record is the guide to what they hope to achieve," he adds. "No executive or student can evaluate current labor crises unless judgments are based on knowledge of labor experiences in the past generation. This book endeavors to fill this need."

And, this reviewer would add, it does so most successfully.

NEWS OF SUPPLIERS

• **Universal Winding Co.,** Boston, Mass., announces that Robert Leeson, sales manager, has been elected president, succeeding his father, Robert A. Leeson, who becomes chairman of the board. The company will move its general offices from Boston, Mass., to Cranston, R. I., about June 1. Robert A. Leeson will, however, maintain personal offices in Boston.

• **Robert Reiner, Inc.,** Weehawken, N. J., continues as distributor for Schlick sectional beaming machines in the United States and Canada, handling sales, installation and servicing of this machine.

• **Ciba Co., Ltd.,** makers of textile chemicals, moved to new offices May 1, in the Victoria Square Building, 759 Victoria Sq., Montreal, Que. Improved laboratory facilities are provided in the new location.

• **Southern Dyestuffs Corp.,** Charlotte, N. C., has plans for new one-story addition to plant near that city, to provide facilities for increased production, as well as storage and distribution. Capacity will be increased about one-third. Cost over $65,000, with equipment. New unit is scheduled for completion in July.

• **The Torrington Co., Ltd.,** Upper Bedford, Que., makers of knitting machine needles, opened a branch office and warehouse at 137 Wellington St., W., Toronto, May 1; Lyall J. Gould is manager.

• **The Mathieson Alkali Works,** New York, announces the appointment to its New York office sales force of James R. Harrington, formerly with the Titanium Division of National Lead Co. Mr. Harrington, who received his chemical engineering training at Washington University in St. Louis, will cover the Metropolitan area for Mathieson.

• **Watson-Williams Mfg. Co.,** Millbury, Mass., has added D. C. Ragan, High Point, N. C., to its southern representatives. Mr. Ragan is also connected with the New England Bobbin & Shuttle Co. which he will continue to represent.

• **Morrow & Morse, Inc.,** manufacturer of the "knitting loom" described in the April TEXTILE WORLD, is moving its plant from New York City to Holyoke, Mass., and will be known henceforth as **Gross & Morse, Inc.** The **National Textile Co.,** Fall River, Mass., remains as selling agent.

Yarn Selling Merger

The personnel of Klumpp, Glynn & Co., Philadelphia, has become the yarn department of Bliss Fabyan & Co., Inc., New York, and is operating as the Klumpp Glynn Department of Bliss Fabyan & Co., Inc., with headquarters at 1700 Walnut St., Philadelphia. All the mills represented by Klumpp Glynn and Bliss Fabyan continue their association with the new department. Joseph J. Klumpp was associated with Cannon Mills for many years before joining forces with Martin P. Glynn, Jr. The latter was originally with Cannon Mills and later with W. A. P. MacKnight. His father, the late Martin P. Glynn, headed the Cannon yarn selling organization for many years.

• **National Oil Products Co.,** Harrison, N. J., announces that Logan Grupelli, sales promotion and advertising manager of the industrial sales department is conducting a technical sales survey throughout the United States and will visit textile and paper manufacturing centers. The company also announces the following personnel changes: J. Gaynor Mac Intyre of the technical sales staff has been appointed New England sales representative succeeding the late Adam Craig; Mr. Mac Intyre, who will specialize on the textile industry, has had many years of practical experience in textile processes; Paul Starke has been assigned to Baltimore to cover Maryland and Virginia while H. L. Marden has been sent to cover the Maine, New Hampshire and Vermont territory.

• **Foxboro Co.,** Foxboro, Mass., makers of industrial precision instruments, announces the appointment to vice-presidency of C. E. Sullivan, who had been sales manager since 1920. He has been instrumental through 26 years service in the rapid growth of the company and the expansion of its line. Mr. Sullivan will spend the next six weeks in Europe visiting the Foxboro factory in England and distributors in other European countries.

• **Armstrong Cork Co.,** Lancaster, Pa., announces the following executive changes: C. Dudley Armstrong, grandson of one of the company's founders was elected vice-president and secretary, succeeding William R. Hamilton, retired; H. R. Peck, general manager of the Building Materials Division, was elected a director; Arthur K. Barnes resigned as advertising manager, effective May 1, and is succeeded by John P. Young, formerly assistant advertising manager; Ralph Winslow becomes assistant advertising manager. Mr. Barnes, who served the company for twenty years, has become vice-president in charge of sales for the Fontana Farms Co., a community development firm of Fontana, Calif.

• **Hemphill Co.,** manufacturers of Banner Circular Knitting Machines, Pawtucket, R. I., announces that, as result of amicable conferences between the company and its factory employees, an accord was reached by which basic day rates and substantially all-piece work rates were increased 10%. In addition, factory employees in service one year or longer and who are paid on an hourly basis were granted an annual vacation of one week with full pay. The company has not indicated whether the increase will result in increased price of Banner products.

• **American Textile Engraving Co.,** Greenville, S. C., has been organized and chartered to engrave copper and other rolls for printing cloth goods, paper, etc. Capital stock is $2,400. Officers are: Harold W. Stone, president; Clarence E. Stone, Sr., vice-president, and Charles E. Jarrard, secretary and treasurer.

• **The Canadian Allied Textile Trades Association,** at a special meeting in the King Edward Hotel, Toronto, recently decided to continue operations instead of disbanding as anticipated.

• **R. E. Chronley, Inc.,** Providence, R. I., has taken over the textile machinery and supply business which was formerly a part of the J. F. Chronley Mfg. Co. The latter company is now devoting its time to the manufacture and distribution of brushes and brooms exclusively. Robert E. Chronley is president and treasurer of R. E. Chronley, Inc.

• **Pan-American Color and Chemical Co., Inc.,** Paterson, N. J., announce opening of their factory warehouse, laboratories and offices at 18 Market St., that city, where they will carry a complete line of acetate, direct and diazo dyes, textile products and chemicals; they also are headquarters for quinizarin and dinitraniline.

• **Maurice Gonon Textile Machinery Agency,** Montreal, Que., which represents leading U. S. and European textile machinery builders, will be carried on by Mrs. Isabelle Gonon, widow of the agency founder, it is announced. Mrs. Gonon was formerly Miss Isabelle Lawrence of Holyoke, Mass.

• **Forbes Lithograph Mfg. Co.** were the printers and Winternitz & Cairns Advertising Agency, New York, were the designers of a cellophane-wrapped package of baby diapers used by Riverside & Dan River Cotton Mills, which won an award in the recent All-American Package Competition. The unit, called the "Charmspun Package," was designed both to dramatize the package and insure cleanliness and sanitation.

• **Atlas Powder Co., Zapon Division,** Stamford, Conn., announces that Maynard J. Creighton, general manager of the Zapon division, has been elected to the board of directors of the company. He has been with the company since 1924.

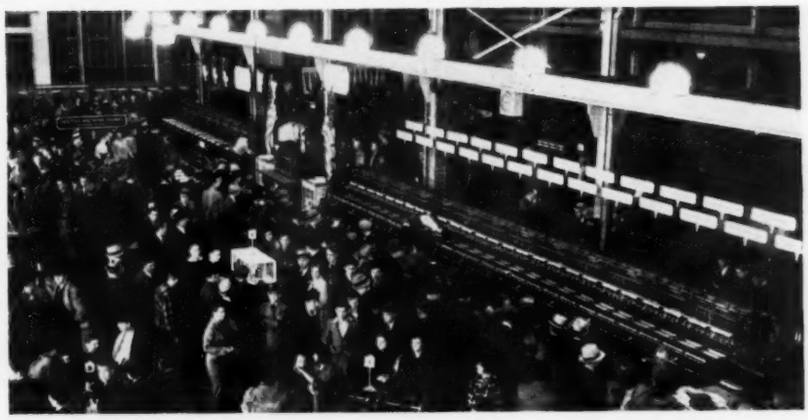
• **Homestead Valve Mfg. Co.,** Pittsburgh, Pa., Hypressure Jenny Division, announces appointment of the following distributors for handling exclusively its line of chemical vapor spray cleaning machines: Toledo Equipment & Supply Co., 1007 Jefferson Ave., Toledo, O.; Oil Burner Equipment Co., 504 Lafayette St., Tampa, Fla.; Merkel & Roberts, 478 E. Erie St., Painesville, O.; Gleasner Corp., 217 Leroy Ave., Buffalo, N. Y.

• **General Electric Vapor Lamp Co.,** Hoboken, N. J., announces the following changes in personnel: D. R. Grandy, has been promoted to assistant sales manager in charge of publicity, being succeeded as commercial engineer by G. J. Taylor; L. F. Gerisch has been transferred from the Commercial Engineering Department to the Publicity Department. Additions to district staffs include: H. W. Conklin, Cincinnati, C. J. Mason, Hoboken, C. K. Lambka, Chicago, C. W. Powell, Detroit.

• **General Electric Co.** announces that the Ford Motor Co. plans a 50% increase of installed capacity in large 1200-pound-steam turbines at the River Rouge plant, Detroit. A third 110,000-kilowatt turbine-generator unit now under construction at Schenectady will be added to the present power plant, making the total installed capacity 350,000 kilowatts. The new turbine will duplicate the second 110,000-kilowatt unit, recently installed, for steam conditions of 1200 pounds, 900°F and one inch back pressure. Hydrogen cooling is employed for the generators, to provide for increased efficiency of operation.

• **Lincoln Electric Co.,** Cleveland, Ohio, announces appointment of Don McCormick as arc welding consultant for the Kansas City, Mo., office, at 1818 Main

Open House at Textile Machine Works



Open house was held at Textile Machine Works, Reading, Pa., during the Knitting Arts Exhibition in Philadelphia last month; and some 20,000 persons, including Reading folk as well as many visitors from the show, attended. The exhibition room, shown above, attracted the most interest because of the ingenious means employed to show the various mechanisms of full-fashioned hosiery machinery in slow-motion operation, together with working demonstrations of new hosiery-machine parts, complete braiders, and various machine tools and inspecting instruments.

Germans Pay Visit

A group of over 50 leading German textile men paid a visit to this country last month for the purpose of studying our latest machinery developments. After visiting numerous plants and attending the Southern Textile Exposition at Greenville, the visitors expressed themselves as impressed by the design refinements and high speeds of our equipment. Prof. Ernst Gräbner, director of the Hoheren Textile School, headed the trip, which was arranged by the American Express Co.

St. Mr. McCormick, formerly welding supervisor for Sheffield Steel Co. of Kansas City, has had broad experience in practical application of electric welding.

• **Linde Air Products Co.,** Unit of Union Carbide and Carbon Corp., announces opening of a new Linde oxygen plant on Powhattan Ave., Essington, Pa., near Philadelphia. This plant, which will take care of the company's increasing oxygen requirements in the Philadelphia area, brings the total number of Linde oxygen plants serving the oxy-acetylene welding and cutting needs of industry to 70. The company also announces opening of a new Prest-O-Lite acetylene plant at 2330 Armistead Bridge Road, Norfolk, Va. This plant, which will take care of increasing acetylene requirements in the Norfolk area, brings the total number of Prest-O-Lite acetylene plants serving the oxy-acetylene welding and cutting needs of industry to 53.

• **Lincoln Electric Co.,** Cleveland, Ohio, announces the following appointments to its Philadelphia sales staff: William Sivyer, graduate of the University of Illinois, and B. B. Ross, graduate of Kentucky Wesleyan College. They will assist O. P. Lang, H. H. Stahl, L. J. Cogan of the Philadelphia office, which is under the management of George R. Johnson.

• **H. H. Rosenthal Co., Inc.,** 25 East 26th Street, New York, distributors, importers and exporters of chemicals, oils, drugs and allied products announce that Walter J. Murphy is now associated with this organization. Mr. Murphy was managing editor of *Chemical Industries* for the last seven years.

Textile World Analyst

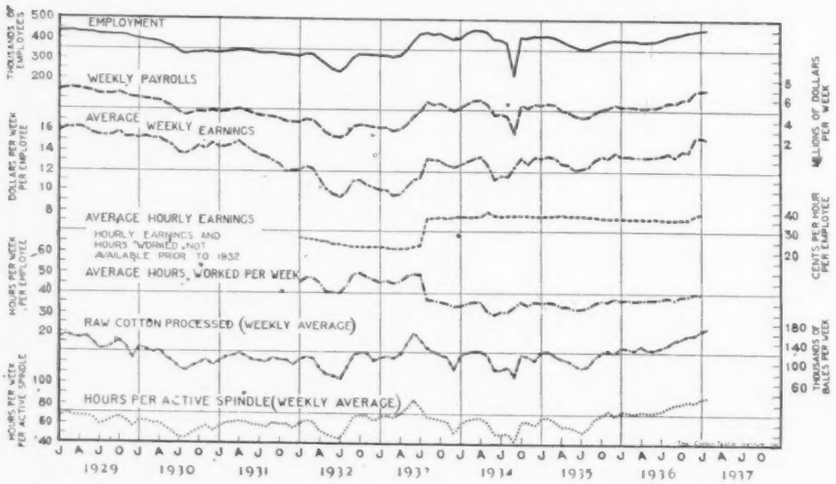
TEXTILE WORLD'S index of textile mill activity for the first quarter of 1937 showed a remarkable rate as compared with both last year and a "normal" year—being approximately one-fourth more than the corresponding period of last year and one-third over the first quarter for the 1924-31 average. Cotton showed the highest rate of increase as against 1936—about 28%—while wool, rayon and silk were bunched together—all approximately 15% over last year. *March itself was the most active month, for textile mills, on record . . .* Carded yarn and fabric margins held their own during April (Tables I. and II.) However, in the first week of May, the fabric margin dropped nearly one cent (to 24.4c. on May 6) . . . Although TEXTILE WORLD's price index numbers for cotton yarn and gray cloth rose for April and raw cotton remained the same, the price trend was actually downward during the month. This apparent discrepancy is due to the fact that the indices are based on the average price for the entire month.

Textile World's Price Index Numbers

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Those who wish to continue with indices based on July 1, 1914, for chart purposes or otherwise, can secure conversion factors to change the new figures to the old by writing TEXTILE WORLD, Statistical Dept., 1427 Statler Bldg., Boston, Mass. Figures on cotton manufactures, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.

	Cotton Index Numbers				Wool Index Numbers				Silk Index	Rayon
Date	Cotton	Yarns Gray	Yarns Colored		Wool	Tops	Yarns	Cloth	Raw-Silk	Index
1923-25	100	100	100	100	100	100	100	100	100	100
1930 ave.	50	61	61	72	58	61	72	90	109	46
1931 ave.	32	68	46	59	46	49	59	71	32	32
1932 ave.	24	37	37	60	36	40	52	57	21	28
1933 ave.	39	56	55	50	53	59	62	80	21	26
1934 ave.	61	67	70	62	63	70	75	91	17	25
1935 ave.	60	68	67	69	56	58	70	88	22	24
July 1935	61	68	65	69	56	59	70	89	20	23
Aug. 1935	58	68	66	69	56	59	70	89	23	24
Sept. 1935	55	66	68	69	58	60	70	89	25	24
Oct. 1935	57	68	68	69	60	61	73	92	27	24
Nov. 1935	60	70	69	72	62	65	75	92	27	24
Dec. 1935	60	71	69	72	64	66	76	92	26	24
Jan. 1936	48	67	63	68	67	73	75	93	26	24
Feb. 1936	42	62	58	67	72	81	77	93	24	24
Mar. 1936	42	61	57	66	73	81	77	93	23	24
Apr. 1936	43	60	55	64	68	75	76	90	22	24
May 1936	43	57	54	64	67	75	76	90	21	24
June 1936	44	58	57	65	67	75	76	90	20	25
July 1936	48	61	61	70	69	75	75	90	22	26
Aug. 1936	45	62	63	70	70	75	74	90	23	26
Sept. 1936	45	62	63	70	70	75	74	90	22	26
Oct. 1936	45	64	67	71	71	75	74	92	23	26
Nov. 1936	45	65	74	72	78	82	76	100	26	26
Dec. 1936	48	72	80	74	87	90	84	105	26	26
Jan. 1937	48	73	81	76	90	93	88	108	27	26
Feb. 1937	48	74	78	76	90	92	90	108	27	26
Mar. 1937	53	78	80	78	**87**	**88**	**90**	**112**	27	26
Apr. 1937	53	80	82	80	84	83	90	112	27	27

Statistical Picture of Cotton Textile Industry



This chart has been prepared by the Cotton-Textile Institute based on data published by Bureau of Labor Statistics and Bureau of the Census.

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Fabric and yarn manufacturing margins follow:

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933..	21.4	December, 1935.	16.2
October, 1933.	19.1	January, 1936..	17.2
January, 1934	18.4	February, 1936.	16.5
April, 1934...	17.6	March, 1936...	15.5
July, 1934....	15.5	April, 1936....	14.3
August, 1934..	16.6	May, 1936.....	14.3
September, 1934	18.6	June, 1936.....	15.3
October, 1934..	17.4	July, 1936.....	16.9
November, 1934.	15.8	August, 1936..	18.0
December, 1934.	16.2	September, 1936	18.4
January, 1935..	16.2	October, 1936..	21.2
February, 1935.	16.0	November, 1936	25.4
March, 1935...	15.9	December, 1936.	28.1
April, 1935....	16.1	January, 1937..	28.6
May, 1935.....	16.0	February, 1937.	26.2
June, 1935.....	16.5	March, 1937...	25.6
July, 1935....	15.2	April, 1937....	25.9
August, 1935...	17.1	Apr. 7 ..	26.2
September, 1935	17.9	Apr. 14 ..	26.3
October, 1935..	17.7	Apr. 21 ..	25.9
November, 1935.	16.4	Apr. 28 ..	25.3

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933...	23.5	December, 1935.	16.3
October, 1933..	20.0	January, 1936..	18.4
January, 1934..	18.3	February, 1936.	17.5
April, 1934....	15.9	March, 1936...	16.3
July, 1934.....	14.7	April, 1936....	15.6
August, 1934...	15.3	May, 1936.....	14.8
September, 1934	15.6	June, 1936.....	14.6
October, 1934..	14.6	July, 1936.....	15.0
November, 1934.	13.5	August, 1936..	16.5
April, 1935....	14.1	September, 1936	16.5
September, 1935	15.4	October, 1936..	17.2
October, 1935..	15.8	November, 1936	18.0
December, 1934.	13.5	December, 1936.	20.6
January, 1935..	13.5	January, 1937..	20.8
February, 1935.	13.9	February, 1937.	21.2
March, 1935...	14.4	March, 1937...	21.3
May, 1935.....	13.8	April, 1937....	22.6
June, 1935.....	14.5	Apr. 7 ..	23.7
July, 1935.....	14.3	Apr. 14 ..	22.1
August, 1935..	15.3	Apr. 21 ..	22.5
November, 1935.	16.3	Apr. 28 ..	22.1

...Free... For the Asking

READERS interested in the catalogs and other useful literature reviewed on this page, may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York.

Wool Spinning. Davis & Furber Machine Co. 66-page illustrated and bound catalog, SF-70, gives detailed information on care and operation of company's line of spinning frames. Comprises four sections: frame spinning for woolen yarns, a section for mill executives on operating advantages, construction details, and operation and care facts for overseers and section hands.

Shipping. Acme Steel Co. Booklet describes application of Unit-Load principle to carload shipments to prevent damage, cut bracing and freight costs, and assure customer satisfaction.

Humidification. Julien P. Friez & Sons, Inc. 4-page illustrated bulletin F describes various types of air meters, draft gages, air-filter gages and company's new Pilot Static Head, as well as other products.

Opening Machinery. Proctor & Schwartz Inc. Four illustrated 4-page folders give operation and construction facts and other data on: shredding machinery, mixing picker, jute picker, and suction condenser.

Motors. Fairbanks, Morse & Co. 4-page bulletin No. 1600, illustrated, describes company's line of polyphase wound-rotor or slip-ring, ball-bearing, induction motors, together with information on speed regulation.

Stokers. Combustion Engineering Co., Inc. 8-page catalog contains specifications and engineering data on company's Skelly-Stoker unit, including a table giving coal per hour, equivalent steam and hot water radiation supplied, and other statistics.

Speed Control. Reeves Pulley Co. 30-page booklet, well illustrated, cites uses and advantages of company's variable-speed control in textile mills, including processes and operations from preparation, spinning, weaving, etc. through to finishing.

Yarn Number Tables. Thos. D. Toy & Co. Booklet contains yarn-number tables covering all types of combed or carded cotton yarns from 3s to 300s.

Bearings. Randall Graphite Products Corp. Two booklets: 26-page booklet presents complete diameter specifications and other data on installation of company's line of bronze bearings or bushings, and general information on construction and operation; 24-page booklet covers types of pillow blocks with specifications and prices of various units.

Lubrication. Gulf Refining Co. 8-page pictorial folder "Story of Modern Cotton Manufacturing," traces history of cotton industry's development since 1492, with particular reference to lubrication problems and their solution; includes art photographs of cotton-mill interiors.

Roll Coverings. Textile Division, Armstrong Cork Products Co. 12-page booklet, prepared for textile executives and practical mill men, explains uses and advantages of cork as a roll covering material and cites specific applications in textile mills. Resistance to lateral flow and to liquid penetration are emphasized.

Shipping. Railway Express Agency, Inc. 4-page folder describes advantages of company's service in shipping baggage.

Materials Handling. Cleveland Crane & Engineering Co. 8-page illustrated folder offers a detailed program on how to plan a materials-handling system, with details on installation of such a system in a textile plant.

Winding. Universal Winding Co. 28-page folder considers precision winding from many aspects, including traverse bar and slide, anti-wear tension, straight-belt drive, pulleys, and lubrication.

Microscopes. Bausch & Lomb Optical Co. 20-page catalog D-185 explains mechanical features and laboratory uses of the company's H-type microscopes with specifications of each; also covers school microscopes, triple-lens condenser, vertical-inclined binocular bodies, etc.

Motors. Allis-Chalmers Mfg. Co. 4-page leaflet illustrates and describes characteristics and applications of company's Quick-Clean motors, with particular reference to operation in cotton mills or other use where protection against lint accumulation in the motor is important; also explains self-cleaning function.

Knitting Machines. Wildman Mfg. Co. 4-page folder describes pattern range of knitted rayon fabrics that can be produced on company's style FBSS-6 rayon pattern machine. Sample fabric attached.

Fuel Meter. Wm. O. Hebler Co. 6-page catalog insert covers use of fuel ratiometer for measuring CO_2 and stack temperatures, including data on principle of operation, hydrogen checking, CO_2 determination, and functioning of pyrometer.

Packing. Mechanical Goods Division, U.S. Rubber Products, Inc. 112-page manual offers comprehensive presentation of industrial packing development and efficient application of packings to specific purposes. Prepared by many engineers and technicians working in collaboration to assist engineers in properly adapting company's packings to individual needs. The manual gives complete engineering data on the various characteristics of each packing. Included in 12 divisions are a 12 page engineering section and several sections devoted to recommendation charts.

Bearings. S K F Industries, Inc. 24-page booklet, "S K F in the Cotton Mill," contains 100 illustrations of textile machinery applications, describes application of company's ball and roller bearings to practically every machine in standard cotton mills, and emphasizes roller-bearing spindle, tension pulley, and application of bearings on spinning and twisting frames.

Operation Timing. Westinghouse Electric and Mfg. Co. Two 4-page catalog sections: 41-375 tells how company's recently introduced cycle counter definitely times operation of any apparatus which will or can be arranged to open or close an a.c. circuit of known frequency; 43-770 describes company's Trans-O-Meter, a portable device for measuring the amount of light which will pass through a fabric.

Mill Paints. Detroit Graphite Co. Two folders describe paints designed for textile mills: (a) Spray-White for interiors, stressing simplicity of application, economy etc; and (b) Sta-White, emphasizing lasting quality of whiteness and including data on fume-proof white enamel for all interiors subject to excessive moisture, fumes, heat, humidity.

Miscellaneous: Recent issues of manufacturers' publications containing items having a textile slant are as follows: March Kem *Sizing News* contains article on physical testing of sized rayon ends, including fundamental concepts and test methods, and reprints article on warp sizing machines from Sept. 1936 TEXTILE WORLD; March *Rayon Warp Sizing Specialist* discusses number of split rods to be used in cotton-system warping and a mill foreman's twelve years' experience with Johnson sizers; March issue of *Parks' Parables* includes one-page article on central air conditioning, with discussion of equipment needs and general facts on operation.

The Personal Page

William C. Appleton, vice-president in charge of sales of The Viscose Co., was elected president of that company, succeeding **Samuel A. Salvage,** who was elected chairman of the board, at a meeting of stockholders held May 3 at Marcus Hook, Pa.

George A. Sloan, former president of the Cotton-Textile Institute, was elected a vice-president of the Chamber of Commerce of the United States at the annual meeting in Washington last month.

Textile men invited by Secretary Perkins to attend the first industry-labor conference April 20 were **ex-Gov. O. Max Gardner,** counsel for Cotton-Textile Institute, and **Robert Amory,** president, Nashua Mfg. Co. Those invited to the second conference, May 4, were **Donald Comer,** president, American Cotton Manufacturers Association, and **Frank Griffin,** vice-president, the Viscose Co.; **Robert West,** president, Riverside & Dan River Cotton Mills; and **Harold Whitman,** president, Esmond Mills.

John Hoye, author of the series of articles, "Staple Cotton Fabrics," running currently in TEXTILE WORLD, has resigned his position with Iselin-Jefferson Co. to become fabric technician with W. Harris Thurston, New York.

Ernest N. Hood is now the treasurer of Old Colony Mfg. Co., Taunton, Mass. Mr. Hood has been in the cotton textile industry for more than 35 years, most recently as treasurer of the Naumkeag Steam Cotton Co., Salem, Mass. He served three terms as president of the National Association of Cotton Manufacturers, and for ten years was a member of the executive committee of the Cotton-Textile Institute. He was also a member of the cotton textile code authority during its entire existence. Control of the Old Colony Mfg. Co. has been acquired by a group of Boston men, including Mr. Hood, Philip A. Moreland and Philip S. Jamieson. Mr. Moreland, who was associated with Mr. Hood for many years as cotton buyer, has been elected president. Mr. Jamieson, senior partner of J. B. Jamieson Co., Boston, selling agents for cotton yarns, is third member of the board.

T. H. Burkhardt has joined the Cleveland Cloth Mills, Shelby, N. C., as vice-president in charge of manufacturing. He has been in the rayon industry since 1921, for the last seven years being in charge of manufacturing for Burlington Mills Corp. Previously he had been connected with Cleveland Cloth Mills, North American Rayon Corp., American Bemberg Corp., J. W. Cox & Co., and H. R. Mallinson & Co.

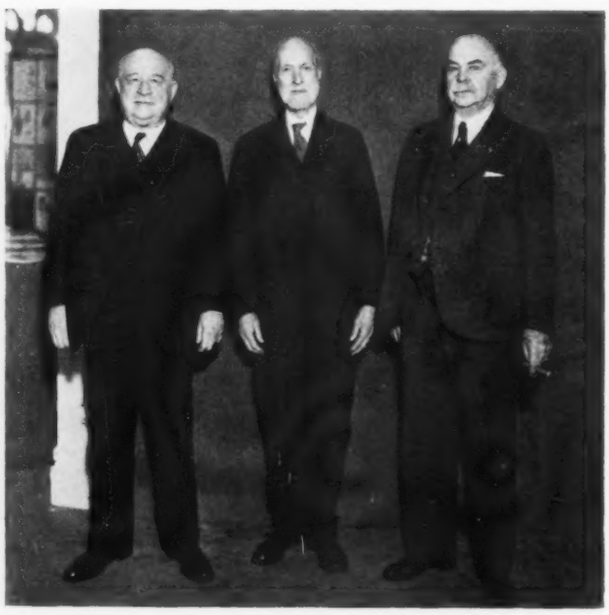
Clarence Kimball, for many years a director, has been elected president of Read & Lovatt Mfg. Co., New York, with throwing plants in Palmerton and Weatherly, Pa. Mr. Kimball succeeds the late A. B. Strange.

Harry C. Templeton, who has made his headquarters in the New York office of American Woolen Co. in his capacity as general manager, has returned to Assabet Mills, Maynard, Mass., where he previously had served as agent.

David W. Chalmers, president of Chalmers Knitting Co., Amsterdam, N. Y. has been elected chairman of the board. **James E. Campbell,** who has served as secretary for the last two years, has moved up to the presidency.

Alex Van Straaten has resigned as president of Van Straaten & Havey, Inc., Germantown, Pa. **Charles F. Havey,** formerly treasurer, has been elected president and his son **C. Lee Havey** has been named as treasurer.

Nearly 180 Years of Textile Experience



These three men ranked as the veterans of the industry among those visiting the recent Knitting Arts Exhibition. Left to right: James Austin of American Thread Co., New York, 59 years in the industry; Frederick H. Bishop formerly vice-president of Universal Winding Co., Boston, 61 years in the industry; Frank L. Nagle, chairman of the board of Bragdon, Lord & Nagle Division of McGraw-Hill Publishing Co., 57 years in the industry. Mr. Bishop was a pioneer in fostering textile machinery shows and has been closely identified with the Boston, Greenville and Philadelphia exhibitions. Mr. Nagle has been continuously associated with the publishing of TEXTILE WORLD and its predecessors. Mr. Austin is the dean of the cotton yarn business and the father of James A. Austin, New England editor of TEXTILE WORLD.

At World Textile Conference

TEXTILE MEN who were designated to attend the World Textile Conference in Washington last month included:

United States Employer Delegate: O. Max Gardner, former governor of North Carolina.

United States Employer Advisors: Robert R. West, president, Riverside & Dan River Cotton Mills; Robert Amory, president, Nashua Mfg. Co.; Frederick Steele, Pierce Bros., Ltd.; Scott Roberts, president, Alabama Cotton Manufacturers' Association; Robt. E. Henry, president, Dunean Mills; Herman Cone, treasurer. Proximity Mfg. Co.; Wm. M. Banks, president, Georgia Cotton Manufacturers' Assn.; Hyman L. Battle, manager, Rocky Mount Mills; Donald P. Johnston, Royal Cotton Mill Co.; R. D. Hall, secretary, Stowe Thread Co.; Harvey W. Moore, Brown Mfg. Co.; Roy E. Tilles, Gotham Silk Hosiery Co.; Ward Cheney, president, Cheney Bros.; D. E. Douty, United States Testing Co.; William Menke, of Menke Kaufmann & Co.; J. J. Goldsmith, Hess Goldsmith & Co.; Franklin W. Hobbs, president, Arlington Mills; Lewis A. Hird, Samuel Hird & Sons; Col. Millard Brown, Continental Mills; Harold Walter, Uxbridge Worsted Co.; Geo. H. Roberts, Bemis Bros. Bag Co.; Jarvis Cromwell, William Iselin & Co.; Paul Whitin, Whitin Mfg. Co.; Frank Hillary, Wellington Sears & Co.

Thomas F. Glennon, agent of Quissett Mill, New Bedford, Mass., for many years, has been elected president to fill the vacancy caused by the death of William M. Butler.

Earl Spencer has become secretary-treasurer of Valdese (N. C.) Mfg. Co.

Ben Trotter, who has served the production department of Marshall Field & Co. on legal matters for some time, will henceforth devote his entire efforts to the company as counselor and personnel manager. **B. F. Schell, Jr.,** has been placed in charge of accounting and standards in the mills of the group.

Henry P. Kendall, president of Kendall Co., and **B. E. Geer,** now president of Furman University but associated with the textile industry for many years, were given degrees of Doctor of Laws by University of South Carolina.

Morgan Butler has been appointed co-receiver of Hoosac Mills Corp., New Bedford, Mass., to succeed his father, the late William M. Butler.

Donald Comer of Birmingham, president of Avondale Mills and president of American Cotton Manufacturers Association, has been advised of his election as a member of the board of the Ocean Steamship Co., Savannah. His uncle, brother of the late Governor Comer, was formerly president of the Ocean Steamship Co.

R. W. Smith has been made sales manager of the Aspinook Co., Jewett City, Conn., and will make his headquarters in New York. He succeeds the late L. A. Hough.

Ralph C. Maultsby, southern manager of McGraw-Hill Publishing Co., Inc., at Atlanta, Ga., and Miss Virginia Martin, daughter of Dr. and Mrs. Moir S. Martin, of Mt. Airy, N. C., were married at the latter place April 17.

Martin L. Cannon, Jr., has become assistant to the manager and treasurer,

Earl H. Brown, at Carolina Textile Corp., Dillon, S. C. His father is president of these mills.

Edward R. Healy has been made general superintendent and colorist at Textile Printing & Finishing Co., Lebanon, Pa.

Henry Brookshaw has joined the Boston office force of Southeastern Cottons, Inc.

H. A. Jefferson has been appointed purchasing agent at Wabasso Cotton Co., Ltd., Three Rivers, Que.

Alfred Burgess who has been assistant general superintendent of the Farr Alpaca Mills, Holyoke, Mass. has resigned and his place is being taken by **M. Williams. Jarvis Smethers,** who has been chief engineer of the boiler plant in the No. 4 and No. 2 mills has also resigned.

A. B. Alexander, Jr., has been appointed superintendent of Shelbyville (Tenn.) Mills plant of U. S. Rubber Products, Inc. He has been with the concern since his graduation from Georgia School of Technology in 1931.

Joseph W. Schimek, vice-president of Soutex Machine Co., Chattanooga, Tenn., is receiving condolences on the death of his twelve-year-old son, killed by an automobile.

Henry Connor has been promoted to superintendent of Algadon Mills No. 1, Bessemer City, N. C., succeeding **J. C. Hooks,** who is now general superintendent of all the mills operated by Frank Goldberg and associates.

Ernest N. Hood, now treasurer, Old Colony Mfg. Co., Taunton, Mass.

T. H. Burkhardt, now vice-president, Cleveland Cloth Mills, Shelby, N. C.

Davis Douglas, formerly of Rome, Ga., where he was connected with Tubize Chatillon Corp., has become southern representative of Brown Instrument Co., Philadelphia.

C. A. Peterman, who has represented Iselin-Jefferson Co. in Atlanta for the last four years, has joined the sales organization of Mill Associates, Inc., for which he will cover the entire southern territory.

Charles U. Bay, chairman of the board of directors of Bay Co., Bridgeport, Conn., has been elected a general partner in the New York Stock Exchange firm of A. M. Kidder & Co.

C. M. Paterson has been elected president of Chicago Yarn Men's Circle. **William Yates** is secretary and **Frank Kingsley** is treasurer.

T. L. Richie, of Gastonia, N. C., has been appointed to the southern staff of Victor Ring Traveler Co., succeeding **Dick Mason,** resigned.

E. C. Matthews is now general manager of the Thermo Knitting Mills, West Sand Lake, N. Y.

Obituary

J. W. Sanders, aged 71, owner and operator of cotton mills in Meridian, Yazoo City, Winona, Natchez, Magnolia, Kosciusko, Starkville, and West Point, all in Mississippi, and Mobile, Ala., died in New York City April 2.

William L. Lyall, aged 73, chairman of the board of directors of Brighton Mills, Shannon, Ga., died at his home in Ridgewood, N. J. on April 16. **Mr. Lyall** started off with J. & W. Lyall Co., loom manufacturers, in 1885, but later changed over to the manufacture of textile products.

Norman Linnett, aged 45, managing director of Courtaulds (Canada), Ltd., Cornwall, Ont., died on March 29.

Joseph Wells Bailey, aged 63, agent of Booth Mill, New Bedford, Mass., and former agent of Butler Mills of that city, died in Providence, R. I., on April 23. He was a member of the first graduating class of Lowell Textile Institute, taught four years at Georgia School of Technology, and was the first principal of Bradford Durfee Textile School at Fall River. For a time he was superintendent of Samoset Mills, Valley Falls, R. I., and Davis Mills, Fall River.

Everett H. Brown, aged 71, president of Wister Spinning Co., Inc., Philadelphia, died on April 1.

William P. Welsh, aged 55, president of Springfield Blanket Co., Holyoke, Mass., died April 5.

M. Leslie Hough, aged 51, treasurer and general manager of Enterprise Dye Works, Inc., Woonsocket, R. I., and a director of the Rathbun Knitting Co. of that city, died in Boston on April 9.

Michael H. Donahoe, founder and treasurer, Shetucket Worsted Mills, Inc., Baltic, Conn., died suddenly of a heart attack at his home in Baltic on April 10.

Fred J. Thieme, formerly superintendent and secretary of Wayne Knitting Mills, Fort Wayne, Ind., and later, until his retirement, vice-president of Munsingwear Corp., died in Beverly Hills, Cal., in March.

Dan C. Russell, aged 54, vice-president of North Star Woolen Mills Co., Minneapolis, Minn., and in charge of the New York office, died at his home in Bronxville, N. Y. on April 9.

Francis J. Cartledge, aged 77, former general superintendent of the Durham (N.C.) Hosiery Mills, a co-founder of the Middlesex Knitting Mills at Lowell, Mass., and earlier general manager of the York (Pa.) Knitting Mills, died on April 8 at Ipswich, Mass. He retired from business in 1931.

J. Russell Forrest, aged 29, New York sales representative for H. Brinton Co., died in Philadelphia on April 9.

Charles W. Bleakley, age 65, for 32 years associated with Hunter Mfg. & Commission Co. and its successor Southeastern Cottons, Inc., and in charge of the Baltimore office, died at his home there April 19.

Henry Searing, aged 72, for many years one of the prominent figures in the Worth St. district, and head of the firm bearing his name until his retirement, died on April 11.

Charles S. Merritt, aged 74, associated with the blanket department of Woodward, Baldwin & Co. and about 50 years in the market, died on April 17.

F. T. Buss, 48 years old, manager of Solvay Sales Corp's St. Louis office, died April 18.

Archibald M. Culbertson, aged 67, connected with John Culbertson & Sons, Philadelphia, died on March 27.

Leo O'Melia, for many years treasurer of Brunswick Silks, Inc., Fonda, N. Y., died April 10.

George B. Miller, president of the Robert P. Miller Co., Shoemakersville, Pa., manufacturers of cotton underwear, died at his home in Hamburg, Pa.

Textile Calendar

- **American Cotton Manufacturers Association annual convention. Mayflower Hotel, Washington, D. C., May 12 to 14, 1937.**
- **National Rayon Technical Conference, Wardman Park Hotel, Washington, D. C., May 14-15, 1937.**
- **Cotton Manufacturers Association of Georgia, annual meeting, Cloister Hotel, Sea Island, Ga., June 3 and 4, 1937.**
- Southern Textile Association, Annual Meeting, Myrtle Beach, S. C., June 11 and 12, 1937.
- **Sixteenth Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 6 to 11, 1937.**
- American Association of Textile Chemists and Colorists, annual meeting, Bellevue-Stratford Hotel, Philadelphia, Dec. 3 and 4, 1937.

TEXTILE WORLD'S

Cotton Digest

SINCE cooperation of merchants is probably the first essential of a promotional enterprise such as National Cotton Week, the methods by which that cooperation is enticed are of paramount importance. The Cotton-Textile Institute's "idea book" entitled "Here's How" is an ideal tool for that purpose. Offering merchants workable, tested ideas for profitable promotions, it is regarded by retailers as one of the most practical National Cotton Week "dealer helps" ever issued. This praise is warranted.—*Editor.*

A.C.M.A. Meets in Washington—The American Cotton Manufacturers Association is scheduled to meet at the Mayflower Hotel in Washington from May 12 to 14 inclusive, about the time this issue of TEXTILE WORLD is distributed. Plans completed at this writing include addresses by Edward O'Neal, president of the American Farm Federation; Senator John H. Bankhead, of Alabama; Harry L. Hopkins, administrator of FERA; C. S. Ching, director of industrial and public relations for United States Rubber Products Co.; and David R. Coker, of Hartsville, S. C., cotton growing specialist. Also, Donald Comer, president of the association; Dr. Claudius T. Murchison, president of the Cotton Textile Institute; Cason J. Callaway, chairman of the board of Callaway Mills, and others were expected to speak. A complete account of the meeting will be published in the next issue of this magazine.

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1935 Products Worth More—Manufacturers of cotton goods in the United States reported a slight decrease in employment and a moderate increase in value of production for 1935 as compared with 1933, according to preliminary figures compiled from the returns of the recent biennial Census of Manufactures. There were 382,918 wage earners in 1935 who received $247,780,918 in wages. Total value (F.O.B. factory price) of the products was $1,030,569,146. Production of goods over 12 in. in width was 7,149,345,164 sq.yd. in 1935 as compared with 7,866,040,387 sq.yd. in 1933. The census carries considerable additional information of interest to manufacturers, such as number of establishments, cost of material, electric energy, fuel, etc., and can be secured from the Department of Commerce.

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Would Increase Domestic Uses—"In the stimulation of our domestic cotton consumption lies the future success of the cotton-textile business," recently said Harry L. Bailey, president of Wellington-Sears Co., shortly after his return from Japan as a member of the American Importation Commission. Citing figures showing that American exports of cotton fabrics had fallen off from 565,000,000 sq.yd. in 1927 to 200,000,000 sq.yd. in 1936 (which with importations left a net balance of only 86,000,000 sq.yd.), he urged stimulation of domestic consumption in every possible way.

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Markets Strengthen After Lull—The lull in the sale of gray goods, which became apparent the latter part of March, carried on through most of April although there was fairly heavy buying of some types of print cloth and broadcloth toward the latter part of the month. Prices of both print cloth and yarn eased slightly and the mills continued at a high rate of production, too high, some claimed.

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Cotton Group Would End "On Call"—Abolishment of the practice of making "on call" purchases was recommended by the Southern Cotton Shippers Association in annual convention last month at Memphis, Tenn. The group also opposed posting of bond on hedging operations, and the retiring president, Ben J. Williams, sounded a plea for "a subsidy on cotton production to offset the high tariff of our creditor nation." Dudley D. Dumas, of D. D. Dumas Co., Memphis, was elected president.

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Cotton Improvement Bill Passed—One of the biggest boosts yet given to improvement of cotton is the bill recently passed by Congress authorizing the classing of cotton and the extension of market news services to groups of farmers, according to Secretary of Agriculture Henry Wallace.

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New Uses—Eight new uses of cotton will be encouraged under the cotton diversion program conducted under the provisions of the amended Agricultural Adjustment Act. These include utilization of cotton fabric as: (1) Covering for irrigation and other ditches; (2) to reinforce fills or cuts for highways, etc.; (3) protection for beehives; (4) protective covering for fruits or vegetables during growing; (5) covering for protecting tree seedlings or shrubs; (6) covering hood or tent in connection with spraying trees, etc.; (7) covering material in construction of permanent or semi-permanent structures; (8) reinforcing material for airport runways, etc.

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Loan Cotton Released—Commodity Credit Corp. late in March released another 1,750,000 bales of 11- and 12-c. Government loan cotton, according to Jesse Jones, chairman of the Reconstruction Finance Corp.

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Quality Texas Cotton—The staple length of cotton raised in Texas as a whole decreased as the ginning season advanced, according to a report on the quality of Texas cotton, 1928-35, recently published by the Bureau of Agricultural Economics. The proportion of cotton shorter than $\frac{7}{8}$ in. showed an average increase of from one-tenth of all cotton ginned prior to Oct. 1 to more than one-half of all cotton ginned after Jan. 15. The grade of cotton also decreased as the season progressed. Extra white, white middling and above decreased from 84% of all cotton ginned prior to Oct. 1 to 5% of all cotton ginned after Jan. 15.

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Packaged Sheets—Under the 106-year-old brand name, "Indian Head," Nashua Mfg. Co., Boston, is introducing a new line of sheets and pillow cases in packages which will be sold through wholesalers.

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Cotton Investigation—A detailed report, listed as No. 331, of the Senate investigation of the causes of decline in cotton prices on March 11, 1935, is now available in printed form.

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Higher Retail Prices—American Retail Federation, in a statement issued early last month, prophesied higher retail prices of cotton goods because of current rise in raw materials and factory costs.

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Key cotton prices of May 1, with usual comparisons follow:

	May 1, 1937	Apr. 1, 1937	May 1, 1936	May 1, 1935
Spot cotton, N. Y.	13.41	15.17	11.61	12.15
Ditto, high previous month	15.17	15.25	11.88	12.25
Ditto, low previous month	13.26	13.50	11.55	11.20
10s hosiery cones	32	33½	23½	27½
10s/2 carded skeins	31	33½	23	27½
20s/2 carded peeler warps	35	38½	25½	30½
60s/2 combed peeler warps	66	69	52	55
60s/2 mercerized cones	79	79	51	70
37 in., 3-yd. drill	11¼	11⅝	8¼	9¼
38½-in. 64 x 60s	7⅞	7¼	5⅞	6¼
36-in. 4-yd. 56 x 60s	9¼	9¼	6¾	7¼
Denim, 2.20s	16	16	13	14½

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Statistics of particular interest to cotton manufacturers, showing March operations and the raw material situation:

	March	Feb.
Spindle activity (% capacity)	148.3	144.8
Spindle activity (millions spindle hours)	9,698	8,352
Cotton consumed (bales)	779,302	664,439
Cotton exported (bales)	467,706	462,517
Cotton imported (bales)	45,239	22,544

Cotton

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TEXTILE WORLD'S

Wool Digest

ONE of the staff insists he overheard the following conversation on the train:

"I see where one of the stores is advertising a 9-oz. suit for summer wear."

"That so? The average suit must weigh a lot more than that. Nine ounces is powerful light when you consider how much the buttons and things alone must weigh."

"I'll say it is. But haven't you noticed that these wool people have been showing a lot more snap lately?"

. . . . Whether fact or fancy, the conversation makes a perfectly good spring editorial.—*Editor.*

Princeton Signs with TWOC—At mid-April announcement was made that Princeton Worsted Mills, Trenton, N. J., had signed a collective bargaining agreement with TWOC. This provides for a preferential union shop, 40-hr. 5-day week, time and a half for overtime, one week's vacation with pay. This was stated to be the first wool goods mill to accept the CIO affiliate; a few others, largely in Rhode Island, have followed more recently. Princeton granted a 10% wage increase during the negotiations and on April 21 made a 5c. advance in price of worsted cheviots and a 7½c advance in worsted suitings.

•

Clothiers Regret Advance—There has been much talk of the $5.00 to $7.50 rise in men's suits in the $35 and higher priced classes which has been forced by the advance in fabrics. Several houses have found difficulty in developing sources of supply for lines to maintain in their $35 retailers. A similar situation holds in the lower ranges with clothiers worried about maintaining expected quality in their $20.00 and $25.00 lines.

•

Capper Bill Again—Senator Capper's bill proposing stricter regulation of wool fabric labeling than ever before, has been referred to the Committee on Interstate Commerce. Provisions of this proposed law would be enforced by the Federal Trade Commission and the word "Wool" would not be permitted use on any product unless it contained 25% or more of wool by weight. Every manufacturer, dealer, jobber etc. of wool or part wool fabrics would have to register with the F.T.C. and obtain an identification number.

•

Wool Goods Were Quieter late in April but prices remained firm. Mills hold a comfortable backlog of orders and see no need to force business. It is estimated that orders for men's wear fabrics are about 15,000,000 linear yards larger than at this time a year ago, and mills are operating near capacity. It is believed that the bulk of the season's business has been booked on suitings, although much remains to be done on overcoatings, topcoatings and sports wear. Unfilled orders are reported to exceed, 55,000,000 yd., or over 18 weeks work. More seasonable weather is needed to move spring and summer garments now in clothiers' hands. Perhaps if these turn brisk the primary market will also revive. Glen plaids and gabardines are described as the most wanted items in young men's clothing.

•

Clothing Styles—The drape model will be more popular next fall than at any time since its first introduction into this country, Robert Surrey, men's stylist, told several hundred dealers at the Hart Schaffner & Marx fiftieth anniversary in Chicago early last month. "Introduced in 1931, the drape has made steady progress until today we are delivering more clothing in drape models than in the combined last three or four seasons." Double-breasted sack coats should represent at least 50% of fall purchases, he said.

•

Women's Wear Openings for fall are reported to show a rise of 12½% over the previous season. Buying at the start was light. Women's wear mills, though not so active as men's wear have a backlog to carry them until fall orders begin to accumulate. The cutting trade is loath to buy fall goods until they clear spring and summer stocks. Jobbers seem to have large stocks of women's wear fabrics for spring as they are said to be cutting prices to move them. Women's wear mills at the end of the first quarter held 50% more orders on their books than at the same date a year previous. The spring and summer season holds new possibilities for women's suits, and garment manufacturers report continued demand for fleece sport coats.

•

Tops a Shade Easier—Through April there was a gradual recession in tops until the Top Exchange standard spots lost 7c. to settle at $1.17 on April 30 after starting the month at $1.24. Futures pursued a parallel course. The market in the last week of April was unusually brisk. On April 28, 580,000 lb. changed, a record volume for a single session on the N. Y. Top Exchange.

•

Wool Stocks as of March 27—Quarterly report of Census Bureau showed a 7% decline in apparel wool stocks since December 31, but a gain of 14% from March 28, 1936. The current figure, 120,200,000 lb. scoured basis is less in dealers' hands and greater in manufacturers' hands than in the preceding quarter or a year ago. It bulks heavier in foreign wool than in the two earlier periods. Carpet wool stocks at 37,406,000 lb. scoured, showed scant change from Dec. 31, and a loss of about 3% from a year ago.

•

Lively Hues are slated for next fall and winter sports according to the Textile Color Card Association. Subtly blended "off" colors are to have even greater style significance.

•

A Wool Standardization Laboratory, scientifically designed as to lighting and equipment for research in determining wool fiber factors, was opened early in April in Washington by the Bureau of Agricultural Economics. The Bureau has established grade standards for wool and wool tops on the basis of diameter of fiber, and prepares practical forms for commercial, official and educational use.

•

Emery & Conant Co., Inc., Boston, Mass., has been incorporated to succeed the partnership carried on for many years in the wool trade as Studley & Emery. The new organization results from the recent death of Robert L. Studley. Ralph W. Conant will be president, Allan C. Emery, treasurer; Clifton B. Russell and Richard I. Goodrich, with the late partnership for many years in sales capacities, have been made respectively vice-president and secretary.

•

Key wool prices of May 1, a month ago, and the last two years:

	May 1, 1937	April 1, 1937	May 1, 1936	May 1, 1935
Fine and fine med. territory	$1.02	$1.03	$0.81	$0.60
Ohio ⅜s	.47	.47	.37	.25½
Tops fine 64–66s	1.28	1.28	1.05	.84
average ⅜s	1.10	1.10	.96	.69
high ¼	1.03	1.02	.89	.58
Noils, fine	.83	.80	.68	.49
¼	.62	.60	.53	.40
2–40s 60s wstd yarn	1.85	1.83	1.55	1.28½
8020 serge	2.27½	2.20	1.95	*

* Not quoted.

•

Current statistics on wool consumption and mill activity:

	March (4 weeks)	Feb. (4 weeks)
Wool consumed clean equiv.		
Apparel wool, lb.	26,328,000	25,720,000
Carpet wool, lb.	12,512,000	12,812,000
Machinery activity (40-hr. shift)		
Looms (50" and wider)	122.4%	126.0%
Carpet looms	92.8%	90.9%
Combs	154.1%	152.7%
Worsted spindles	108.5%	111.2%
Woolen spindles	134.2%	142.8%

Wool

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TEXTILE WORLD'S

Rayon & Silk Digest

THE *Rayon Organon* sees probable delay in installing new rayon producing capacity, with the result that its previous estimate of 400,000,000 lb. capacity by the spring of 1938 has been scaled down to a figure nearer 360,000,000 lb. or less. This may upset the calculations of some yarn buyers who had begun to figure on next year to bring a rayon surplus, with the possibility of some price weakness. Of course anything may happen between now and then, but this delay in expansion makes it unwise to figure too definitely on any such outcome.—*Editor.*

Viscose Co. Signs With C.I.O.—Prospects of general union agreements throughout the rayon yarn industry were viewed as materially strengthened last month when the Viscose Co., which produces nearly 50% of all rayon yarn in the country signed a one-year agreement with the Textile Workers Organizing Committee of the C.I.O. High points of the accord are: a 40-hour week, 10% wage increase, $15 minimum wage and recognition of the union as sole collective bargaining agency. Frank Griffin, Viscose Co. vice-president, stated that the above terms had increased costs more than was covered in the current price advance on yarns. Other rayon companies which signed up with T.W.O.C. included New Bedford Rayon Co., and Skenandoa Rayon Corp.

•

Rayon Price Advance General—The advance in rayon prices initiated last month by the Rayon Division, E. I. du Pont de Nemours & Co., was accepted as general this month, following publication of the Viscose Co.'s new list which conforms to the higher levels. Due to the sold-up condition of the industry, the price has had virtually no effect on the market. It applies to orders booked for shipment after June 1, and very little business is being accepted for June or thereafter by producers, most of whom face difficulties in filling orders already on hand.

•

Crush-Resist Velvets Reduced—A new low price of $1.35 for crush-resist velvets was announced by manufacturers last month, and early market reaction indicated this would stimulate consumption in daywear volume field. The price cut was made possible by economies in production. With regular grade velvets now 95c. for black and $1.00 for colors, the differential is down to 40c. and 35c. respectively.

•

Yes, We Have No Names for Staple!—Latest additions to the growing family of suggested names for staple fiber, come from I. W. Spiegel, vice-president, International Looms of New Jersey, Inc., who offers "Fiostra," which combines the first letters of the words "fiber of staple rayon," and "Fistra," a further contraction of the same words.

•

Rayon Fabrics Deliveries—The March index for staple rayon fabric deliveries, 310, against 281 for January and 297 for February, was the highest on record except for November, 1936, the National Rayon Weavers Association announced April 29. Dress goods and novelties continued slow, reflecting the seasonal let-up in most goods branches. Index figures follow:

1934 = 100	January 1937	February 1937	March 1937
Taffetas, Twills, Linings and Other Staples,	281	297	310
Dress Goods, Novelties, and Other Fancies,	111	109	100
Total,	170	175	172

•

De Lisser Quits Textile Affiliates—A. M. De Lisser has become sales manager of the dress fabrics division of Wahnetah Silks Co., where he will have charge of styling, selling and merchandising. He was for the last 2½ years executive secretary of the Textile Affiliates of the Fashion Originators Guild, resigned that post effective, May 10. Previously, Mr. De Lisser had been ten years with Cheney Bros., advancing from stock boy to the post of manager of the dress goods department. Mr. De Lisser's post with Textile Affiliates will be taken by A. W. McCready, who has resigned as legislative representative, National Federation of Textiles.

•

It's "Rayon" by Law Now!—The Belgian and Japanese Governments have officially prohibited use of the term "silk" in any form to describe fabrics having synthetic yarn content; "rayon" is made the legal terminology for synthetic textiles.

•

Raw Silk Prices Weaken—Raw silk prices dropped from $1.96 on March 29 to about $1.82½ on April 26, due to a general easing up in demand. Outlook for the current month was uncertain.

•

Now It's the Textile Salesmen's Association—Bowing to the widespread acceptance of rayon, the 21-year old Silk Travelers' Association on April 20 voted to change its name to The Textile Salesmen's Association. The organization has inaugurated a series of educational forums for young salesmen, the first, which was on "Rayon," was held in New York last month. Speakers included Stanley B. Hunt, of the Textile Economics Bureau and H. W. Rose, of The Viscose Co.

New Rayon Record—U. S. rayon yarn production, all processes, for the first quarter of 1937, totalled 76,000,000 lb., setting an all-time record, May *Rayon Organon* reports. This compares with a 1936 quarterly average of 69,400,000 lb. A feature of this issue is a minute break-down comparison of silk-rayon woven goods manufactures in 1935.

•

Active Call for Imported Rayon Yarn—Thanks to the fact that demand for staple fiber is growing out of proportion to growth in domestic output, American mills have increased their consumption of imported staples in recent weeks, market trends indicate.

•

Looking Ahead in Rayon—With woollike effects definitely favored, indications point to rayon fabrics being unusually important next fall; spun rayons, of course, are prominent in the picture.

•

Key rayon prices and statistics follow:

Prices	May 1, 1937	Apr. 1, 1937	May 1, 1936	May 1, 1935
Viscose process				
75 denier (18-30 fils.)	$0.93	$0.93	$0.90	$0.85
100 denier (40 fils.)	.82	.82	.79	.74
150 denier (40 fils.)	.63	.63	.57	.57
Acetate process				
150 denier	.63	.63	.60	.60
Cupra. process				
150 denier (112 fils.)	.68	.65	.65	.60
Rayon staple 1½, 3 and 5½ denier viscose	.28	.28	*	*

* Not quoted.

Indices of Deliveries† Month	April	March	Feb.
In year 1937	517	516	549
In year 1936	433	422	517

† Rayon Organon exclusive of acetate. Daily average 1923-25 = 100.

•

Key silk prices and statistics follow:

Prices	April 30, 1937	April 1, 1937	May 1, 1936	May 1, 1935
Crack XX 13/15 white 78%	$1.80½	$1.99½	$1.71½	$1.40
Tram, 5thd Japan 85%	2.72	2.81	2.33	2.27½
Tram crack XX 78%	2.46	2.62	2.25	2.00
60s-2, spun silk	3.15	3.05	2.85	2.75

Statistics	Imports	Approx. deliveries	Stocks at warehouses
April, 1937	39,712	40,561	40,882
March, 1937	32,257	39,934	41,731
February, 1937	37,348	38,484	49,408

Rayon & Silk

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TEXTILE WORLD'S

Knit Goods Digest

AMONG the many good features of the annual meetings of the National Association of Hosiery Manufacturers and the Underwear Institute was the provision made in each case for open discussion from the floor. In our opinion, this is vital to the success of a convention. Too often there is nothing but the formal speeches—with gestures. Members like to talk—as well as listen, and should be encouraged. —*Editor.*

Symposium on hosiery which the American Association of Textile Technologists held on April 7 proved to be a popular affair, with over 100 attending. Among the guests were W. H. Gosch, president of the National Association of Hosiery Manufacturers, and a number of representatives of retail stores. Earl Constantine, managing director of the hosiery association, spoke on the benefits which cooperation have brought the industry within the last five years, particularly along the lines of research and standards. The second speaker, George Urlaub, secretary of the Throwsters' Research Institute, suggested that two-thread stockings be knit only on 51-gage machines, three-thread on 48-gage, four-thread on 45-gage, and five-thread on 42-gage machines. E. N. Ditton, of Gotham Silk Hosiery Co., outlined the development of testing and told of a new method of determining the diameter and defects of silk by running through three successively smaller gages. E. M. Schenke, research associate of the hosiery association located at the Bureau of Standards in Washington, stated his belief that the association should take the lead in setting up standards and indicated several lines along which action might be taken.

•

Reading Settlement Strengthens Union?—Market opinion on the agreement signed between 17 Reading, Pa. hosiery mills and the American Federation of Hosiery Workers, which first held this accord to be rather an empty victory for the union, changed somewhat as the development was studied in perspective. The accord, effective until July 1, 1938, ended a 6-weeks strike; the terms left wages and hours unchanged, but granted union recognition. Pointing out that Reading traditionally was non-union, observers now believe the settlement may serve to strengthen the union's position both in Reading and elsewhere.

•

30,000 Attend Knitting Arts Show—Claims that the Knitting Arts Exhibition ranked among the most successful in the 33-year history of this event, were confirmed when tabulation showed that nearly 30,000 persons had attended. This army of visitors included manufacturers, selling agents, wholesalers and retailers and covered all three knit goods branches—hosiery, underwear and outerwear.

•

Rayon Hosiery Prices Advance—In response to the recent increase in rayon yarn prices, certain manufacturers of rayon-content hosiery have announced slight advances. Resistance to the increase has been shown by buyers and there is some doubt as to whether the new levels will be maintained.

•

Gordon Hosiery Sales up 38.8%—Gordon silk hosiery sales for the first quarter of 1937 were 38.8% above the same period last year, Brown Durrell Co. announces; the chief gain was in "Individually Proportioned" hosiery which rose 45.2%. These figures are part of a statement of sales trends which will be issued monthly by the Brown Durrell Co. as service to the trade.

•

1936 Underwear Figures—Men's pullover athletic shirts were by far the biggest line in knitted underwear output during 1936 according to figures just made public by the Bureau of the Census. The grand total of production for the year was 21,199,296 doz. garments, of which men's pullover shirts totaled 6,396,208; the miscellaneous division came second with 2,606,862 and infant's underwear third with 2,416,436.

•

English Branches for Hosiery Mills?—A check-up this month on reports recently current that Julius Kayser & Co. and Interwoven Stocking Co. had planned to establish branch mills in England, disclosed that no definite steps in that regard had been taken yet by either company.

•

Knit Goods Trade Honors Palfreyman, president of the National Federation of Hosiery Manufacturers' Associations of Great Britain, who has been in this country attending the World Textile Conference, was honor guest at a testimonial dinner given in New York April 15 by leaders of the American hosiery and underwear industry. The event was held under joint auspices of the National Association of Hosiery Manufacturers and the Underwear Institute. Mr. Palfreyman also attended the Philadelphia show, prior to sailing home.

•

Hosiery Market Confused—Caution and uncertainty marked the hosiery market at the end of April, as reaction to two major developments: (a) conclusion of the Reading, Pa. strike; and (b) invalidation of the Kaufman "ringless" patent. Settlement of the hosiery finishing rate dispute was welcomed as a favorable influence. Certain big distributors of hosiery, expecting another price advance, are covering ahead, but most buyers are narrowing orders to immediate needs, pending clarification of the outlook. Mills expect higher labor costs and therefore are discouraging advance business, in the anticipation of a price rise.

•

Ask Status Quo on Hosiery Wages—Offering data to show that $12 and $13 wage minimums now prevail in the hosiery industry, the National Association of Hosiery Manufacturers at a hearing before the Public Contracts Board on the Walsh-Healey Act, April 28, in Washington, asked that these minimums be continued.

•

Chicago Yarn Tournament—The Chicago Yarn Men's Circle will hold its 16th annual tournament June 29 at Bob-o-Link Golf Club, Highland Park, Ill. Invitations are extended by the Circle to executives of hosiery and underwear manufacturing companies in the Mid-West.

•

Show Exhibit Stresses Merchandising—An interesting feature of the Philadelphia show this year was the emphasis by exhibitors on the newest methods of knit goods merchandising. The scope of the exhibits included display and packaging.

•

Fall Underwear Prices Rising—As result of heavy early orders on men's wool underwear, certain mills last month announced price advances of $1.00 to $2.00 per doz. on union suits, and 50c to $1.00 per doz. on wool ribbed shirts. Summer lines were less active, due to backward weather.

•

All Set for "Swim Week"—With plans completed for display of the seven-color "Swim for Health" poster in 20,000 stores throughout the country, it was stated that all was in readiness for the National Week promotional event, which will be held June 21-26.

•

Sweater Demand Improves—Spot buying of sweaters increased at the end of the month after a slow start and mills were hoping for continued activity as season advances; polo shirt prices advanced. Swimsuits maintained their sold-up position of recent months.

Knit Goods

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TEXTILE WORLD'S

Processing Digest

UTILIZING chemicals introduced during the last few years, several finishers have developed new processes and new finishes of unquestionable merit. Some companies have decided not to attempt to keep these processes for their own exclusive use, but to license other finishers to use them at a more or less nominal fee. We believe that this enlightened policy will prove beneficial both to the company which controls the process and to the industry as a whole. One of its most important advantages is the fact that it permits a more comprehensive merchandising campaign than the average individual finisher could undertake, and thus gives a much better chance of gaining widespread consumer demand for the new finish. —*Editor.*

Finishing Activity — More-than-seasonal falling off in cotton finishing activity and increased costs without corresponding price advances are destroying the optimism which prevailed among job finishers at the start of the year. These unfavorable factors are counterbalanced somewhat by the belief that the decline in volume is temporary and will be followed by an upswing as soon as present not-too-extensive inventories of finished goods are exhausted. At a meeting last month of the Finishers Association some consideration was given to the possibility of reviving an open-price arrangement, but no definite action was taken.

•

The Paterson Area—Curtailed schedules in many of the silk and rayon finishing plants in the Paterson, N. J., area, and closing down of the plant of Victory Dyeing & Finishing Co., due to alleged "interference by the union and its agents causing constant interruption of the conduct of the business," are indicative of current conditions. Around the middle of last month it was reported that the survey of the silk and rayon printing industry, which is being carried out under the direction of General Hugh S. Johnson, would be broadened to include silk and rayon dyeing.

•

A.A.T.C.C. Notes—At a meeting of the New York Section A.A.T.C.C., held April 23, at the Swiss Chalet, Rochelle Park, N. J., Dr. D. H. Powers, of Rohm & Haas Co. discussed the application of synthetic resins as textile finishes. Robert Zametkin, of Pilgrim Piece Dye Works, spoke on some aspects of the scouring of rayon. At the spring meeting of the Southeastern Section, held April 24, in Auburn, Ala., J. H. O'Neill, Eagle & Phenix Mills, discussed the control of variation in raw-stock dyeing; and Prof. A. L. Thomas, Alabama Polytechnic Institute, spoke on the analysis of machinery and its proper location in modern plant design with special reference to raw-stock dyeing machines.

•

Unshrinkable Wool—A new process for rendering wool unshrinkable was described by A. J. Hall, at a meeting of the Manchester (England) Section, Society of Dyers & Colourists, March 19. The process, which was developed by Mr. Hall, consists essentially of immersing the wool in a 2% solution of sulphuryl chloride in white spirit or a similar solvent for about 1 hr. at ordinary temperature. The material is then hydro-extracted, washed, and treated in a dilute solution of sodium carbonate or ammonia to neutralize the residual acid. It is stated that this treatment eliminates the felting properties of the wool and renders it unshrinkable, without damaging the fibers. It is asserted further that the wool retains its soft and lofty handle. Wool can be subjected to this process either in the form of yarns or knitted or woven fabrics.

•

Foreign Tour—Leaders in the textile field are among the industrialists who are expected to visit European research laboratories this summer. The tour, which is being arranged by the National Research Council's Division of Engineering and Industrial Research, will include visits to the laboratories of the Cotton Research Association, in England; the Kaiser Wilhelm Institut, in Germany, and L' Ecole Central des Arts ets Manufacturers, in France. According to present plans, the group will sail from New York, May 14, on the S. S. Champlain.

•

Canadian Chemists—The annual meeting of the Quebec Section, Canadian Association of Textile Chemists & Colorists, was held in Montreal, on April 10. The principal address, "How Shall We Keep the Wheels of Industry Turning," was delivered by J. G. Dodd, Dominion Textile Co., Ltd.

•

Size Control Tests—Methods for establishing control tests in textile mills to determine whether or not yarns have been properly sized have been developed by Walter T. Schreiber and M. V. Geib, of the National Bureau of Standards, working with O. C. Moore, of Alabama Polytechnic Institute. The effect of weaving and abrasion on the physical properties possessed by cotton yarn before and after sizing with white potato starch was investigated. A machine was constructed for simulating the abrading and pulling action of the loom, and data were obtained on the physical properties of sized and unsized yarns exposed for varying periods to the machine's action.

Part of exhibit of diversified chemical products developed by E. I. du Pont de Nemours & Co. now on display in the New York Museum of Science and Industry, Rockefeller Center, New York. In addition to the coal tar dyes shown in the illustration, the exhibit includes flameproofing compounds, water repellents, synthetic resins, bleaching agents, fatty alcohol sulphates, synthetic yarns, and pyroxylin coated fabrics.

•

Screen Printing—Development of a three-color separation process for use in conjunction with screen printing has been announced by Alphonse A. Tavernon, of Tavernon Photo Engraving Co., Clifton, N. J. Mr. Tavernon, who was formerly connected with United Piece Dye Works, and was one of the pioneers in developing the screen printing process, states that the new separation process will open up new fields in the screen printing trade.

•

Chemical Engineering Exhibition—A detailed prospectus of the Achema VIII, the chemical engineering exhibition, to be held in Frankfort-on-Main, July 1 to 6, has recently been made available. Courses of study in chemical engineering will be held from July 3 to 6.

Processing

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TEXTILE WORLD'S

Engineering Digest

ONE fact brought out at the Greenville meeting of the A.S.M.E. is that, while few textile machines ever become completely worn out, after a certain amount of wear they can be further used only at the cost of economy and safety. The alert master mechanic will keep his records in such shape that he will know when the expense of maintenance has reached the point where it is cheaper to replace any given machine in the plant than to keep on repairing it. Armed with such records, he will have little difficulty in persuading the management that the time has come to install new equipment.—*Editor.*

"Common Sense Smoke Control" was the title of an address by T. A. Day, assistant secretary, Appalachian Coals, Inc., Cincinnati, Ohio, before the Institute on Coal Utilization, Ann Arbor, Mich., recently. This conference was sponsored by the College of Engineering and Extension Service, University of Michigan. There has been interest in smoke control for hundreds of years, said Mr. Day, and there has been smoke legislation since 1273 when the British Parliament prohibited the use of "sea-cole," a product which had come into general use some fifteen years previously. Smoke is un-burned fuel, it is made of gas, which will burn, and particles of carbon which also are combustible. A smoking furnace, in nine cases out of ten, is not due to the coal, but most likely to the way in which the furnace is fired.

•

More about Coal—Richard Thiessen, in a paper "What Is Coal?" delivered before the Seventeeth Fuel Engineer's Meeting, Cincinnati, Ohio recently says one with little experience is likely to classify coals as good or poor according to their analytical values, calling those of high heat and low ash content good, and those having opposite qualities poor. But this judgement is not always valid. Coal of low analytical value when used with certain equipment and under specific conditions, may prove more satisfactory than coal of higher values. Scientific values, and use values are different things and in the end, if these two values differ, the experienced engineer casts his lot on the side of use value.

•

Economic Conference for Engineers—The seventh annual Economic Conference for Engineers will be held at Stevens Engineering Camp, Johnsonburg, N. J. from June 18 to 26. Four courses are planned, Industrial Management, Course Content and Teaching Method, Industrial Economics, and Industrial Psychology. Generous arrangements have been made for accommodations, recreations, and sports, according to President Harvey N. Davis, Stevens Institute of Technology, Hoboken, N. J., who is handling the enrollment.

•

Light—Blindfold even the most skilled mechanic, according to a statement from the National Safety Council, and he is practically helpless. Any piece of work he attempts to do will doubtless be spoiled, and furthermore, he may injure himself or some other worker. Workers in poorly lighted factories are, in effect, partially blindfolded, argues the Council. Many manufacturers who supply their employees with the best of tools and equipment fail to consider the importance of the workers' eyes and the handicap of poor lighting. The efficiency of the worker determines the efficiency of the machine, and adequate illumination is an essential factor both in high operating efficiency and prevention of accidents. It has been estimated that 15 to 25% of all industrial accidents are due to poor lighting.

•

A New Power Show for the Mid-West—The Chicago Exposition of Power and Mechanical Engineering will be held in the new International Amphitheatre in Chicago, Oct. 4 to 9, 1937. This event will be under the same management which conducts the National Expositions of Power and Mechanical Engineering at Grand Central Palace, New York. The new Exposition is not intended to supplant the Power Show at New York, nor to interrupt its sequence, which calls for the thirteenth show at New York in December, 1938. The frequency of repetition of the Chicago show will be decided after the first show has been held.

•

Safety Record Established—At midnight Sunday Mar. 21, a new safety record was established by the Old Hickory division of the Du Pont company. At that time the plant had operated 11,325,000 hours without a disabling accident. This is the second such award won by the Old Hickory branch which is located 12 miles from Nashville, Tenn.

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Dust Room Explodes—The first known case of a dust room in a textile mill actually exploding is recorded in the last issue of the *News Letter* published by the National Safety Council. Two employees were burned so severely that they later died. An investigation showed that a motor in the napper room got too hot and ignited some lint in the hood under the napper. This burning lint dropped into the exhaust and was carried through the cyclone separator to the dust room where the explosion occurred. A wall 1 ft. thick at the rear of the dust room was blown out, and a mass of burning lint enveloped the employees standing 25 ft. away. Bricks were thrown 50 to 100 ft. The field staff of the Council is making an investigation of dust storage rooms and systems, and is insisting that mills make adequate provision for explosion relief similar to that provided in grain warehouses and other buildings subject to organic dust explosions. This would be accomplished by installation of outward swinging windows, floating skylights, and relief valves along suction lines similar to those provided on exhaust systems where there is a lot of spray painting.

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Electrical products for industry were placed on exhibition by General Electric Co. last month in the General Electric Bldg., 570 Lexington Ave., New York. Cable, distribution equipment, fractional-horsepower and integral motors, industrial control, industrial heating, lighting, meters and instruments, police radio, switchgear, transportation products, turbines and welding; the products of the Incandescent Lamp Department, Air Conditioning Department, and the Construction Material Division and the Plastics Division of the Appliance and Merchandise Department; and the products of the Trumbull Electric Co., General Electric X-Ray Corp., Warren Telechron Clock Co., General Electric Vapor Lamp Company, Bailey Meter Company, Locke Insulator Corp., and Carboloy Co. are on display. Much of the equipment is in operation.

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Safety Pamphlet—A pamphlet containing a report of a recent conference of employers, operators and inspectors on machinery guards and other safety precautions has been published in England, and may be obtained from the British Library of Information, 270 Madison Ave., New York. The pamphlet is by W. E. Lauder, and sells for 15c.

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Power Industry Expands—The electric power and light industry will spend $635,000,000 in 1937 for new construction and maintenance, according to **Electrical World's** annual statistical issue. A minimum of $530,000,000 will go into capital equipment, 60 per cent more than was spent for this purpose in 1936.

Engineering

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Mill News

Cotton Mill News

Avondale Mills, Eva Jane plant at Sylacauga, Ala., has installed a super model Sanforizing machine, having a capacity of 90 yd. a minute, made by Morrison Machine Co., Paterson, N. J.

Athens (Ga.) Mfg. Co. is having the Dixie Spindle & Flyer Co., Charlotte, N. C., equip their spinning rolls with the Guillet taper fitted neck.

Columbus (Ga.) Mfg. Co. has completed the installation of air-conditioning equipment.

Bibb Mfg. Co., Macon, Ga., has plans maturing for new addition to one of its mills at Porterdale, Ga., including improvements in present buildings, with installation of new equipment. Cost close to $100,000. Q. R. Nolen, Macon, is engineer. **Bibb Mfg. Co.,** Taylors mill, Reynolds, Ga., has installed two new Whitin one-process pickers.

Washington Mfg. Co., Tennille, Ga., has awarded general contract to Griffin Construction Co., 452 Spring St., N.W., Atlanta, Ga., for one-story addition, 56x100 ft., for which superstructure will begin at once. Cost over $45,000, with equipment.

Columbia Mills, Inc., Minetto, N. Y., have awarded general contract to H. K. Ferguson Co., Hanna Bldg., Cleveland, Ohio, for two new additions to local mill, three-story, 45x103 ft., and one-story, 45x175 ft., respectively.

Robinson Yarn Mills, Dallas, N. C., are installing 3,000 additional spindles. The installation is in charge of Walker Engineering Co., Gastonia, N. C.

Granite Falls (N. C.) Mfg. Co., a unit of the Shuford chain of mills, has had the machinery all rearranged to balance the different departments.

Proximity Mfg. Co., Greensboro, N. C., is constructing a new water-purification plant at Buffalo Dam, near White Oak, N. C., to provide the best possible water for the employes of the mill village.

Pickett Cotton Mills, High Point, N. C., are having all of the machinery overhauled, using the Guillet overhauling system.

Moore Cotton Mills Co., Lenoir, N. C., is constructing houses to replace the 18 houses of the mill village, destroyed by fire a year ago.

American Yarn & Processing Co.'s Woodlawn Mill at Mount Holly, N. C., recently completed a $35,000 addition including 4,000 spindles, which gives the plant substantially greater capacity.

Entwistle Mfg. Co., Rockingham, N. C., on April 22, put the last four looms of the 275 at their plant No. 3 into operation. This was formerly the old Roberdel mill, which had been idle for some months. The initial shipment of cloth was made April 21. At plant No. 2 the firm has installed a new quill cleaner and a portable tying-in machine.

Hannah Picket Mills, Rockingham, N. C., have completed the construction of 25 additional homes at the No. 2 plant; and seven new warehouses.

Roxboro (N. C.) Cotton Mills are planning construction of an addition to the dyehouse of their Longhurst plant.

Sellers Mfg. Co., Saxapahaw, N. C., has purchased a quantity of equipment from Whitin Machine Works, Whitinsville, Mass., including long draft spinning machinery, quillers, splitters, etc.; and spoolers from Saco-Lowell Shops, Lowell, Mass., for installation in new one-story addition to mill, 100x200 ft., on which work is now under way. An 800 hp. diesel engine has been installed. Entire expansion will cost about $100,000.

Southern Mercerizing Co., Tryon, N. C., is building a two-story addition, 120x90 ft., and will install 10 new Whitin quillers and more No. 102 winders. These figures correct previous inaccurate reports of this development.

Sanford (N. C.) Cotton Mills are progressing rapidly with an extensive revamping and enlargement program. Pickers are being revamped by Saco-Lowell, super-draft fly frames and Casablanca long draft spinning is being installed by Whitin, automatic spooling and high-speed warping by Barber-Colman, an automatic band machine, and a testing machine for yarn cloth. A Curtis & Marble cloth brushing and shearing machine was included in the new installation. It was also said that probably 1,000 or more additional looms may be installed.

Marshall Field & Co. awarded eight contracts, it was announced April 6, for heating and heating accessories for their textile plant additions, under construction, at Spray, Draper, N. C., and Fieldale, Va., at a total cost of $21,919. Crawford & Slate Co., Atlanta, Ga., were given contracts. Work is being rushed on the 3-story extension to Spray Bleachery and the 4-story warehouse to be completed by June 1. Contract has been awarded to Boyd & Goforth, Inc., Charlotte, N. C., for installation of new industrial and domestic water systems at Spray, Leaksville and Draper, with gross capacity of 3,000,000 gals. for industrial supply and 1,000,000 gals. for domestic service.

Clifton (S. C.) Mfg. Co. has had the Textile Shop at Spartanburg, S. C., install the vacuum cleaning system on two of their automatic spoolers.

Springs Cotton Mills, Fort Mill, S. C., are building a colony of houses near Lancaster, S. C. where its operatives may enjoy a rural life two miles out of town instead of living in the shadow of the mill where they work.

Florence Mills, Greenville, S C., have installed new Barber-Colman spooling equipment replacing the old equipment.

Mills Mill, Greenville, S. C., have work under way on modernization and improvements, including installation of long-draft spinners, carders and other equipment. Entire program will cost close to $75,000.

Springs Cotton Mills plant at Lancaster, S. C., has installed a Westinghouse condensing type turbine generator, at a cost of $180,000.

Mary Louise Mills, Mayo, S. C., has been leased by G. H. Anderson and associates, who will modernize and recondition plant and equipment. Mill has been closed down for some time. Operations will soon be resumed for yarn manufacture, giving employment to 125 persons. J. R. Wilson will be superintendent.

Union Mills Co., Monroe, N. C., is having the Dixie Spindle & Flyer Co., Charlotte, N. C., overhaul all of the machinery of the plant.

City Cotton Mills, Newton, N. C., are erecting an addition, two stories, in which additional machinery will be installed.

Kendall Co., Newberry, S. C., has awarded general contract to Potter & Shakelford, Allen Bldg., Greenville, S. C., for one-story addition to local mill. Cost over $50,000, with equipment. Lockwood Greene Engineers, Inc., Spartanburg, S. C., are architects and engineers.

Highland Park Mfg. Co., plant No. 2, Rock Hill, S. C., is having the "No Drip" slasher hoods installed on their slasher units.

Saxon Mills, Spartanburg, S. C., are having the Textile Shop, Spartanburg, install on three of their automatic spoolers, the vacuum cleaning system.

Jackson Mills, Wellford, S. C., have awarded contract to Lee Construction Co., Charlotte, N. C., for installation of intake structure, tailrace, power station and other construction for new hydro-electric generating station at Mill No. 3, High Shoals, N. C. New plant will have a capacity of 2500 hp.

Oconee Textiles, Inc., Westminster, S. C., have awarded contract to Walker Engineering Co., Inc., Westminster, for installation of additional equipment, estimated to cost $75,000. Mill capacity will be increased.

Elk Cotton Mills, Fayetteville, Tenn., cotton yarns, has underway an extensive modernization program, including the installation of considerable Saco-Lowell preparatory equipment.

Downcraft, Inc., Memphis, Tenn., manufacturers of cotton, wool and down quilts, recently completed installation of machinery and began operations. The plant will employ 30 skilled workers at the start. C. C. Belcher, production superintendent for Marshall Field & Co., Chicago, will be in charge.

Riverside & Dan River Cotton Mills, Inc., Danville, Va., recently awarded contracts for two construction jobs to C. L. Lewis, Lynchburg, S. C., to cost approximately $100,000. Two stories are to be added to a four-compartment warehouse, and a kier-room of reenforced concrete, 150x50 ft., is to be erected.

Crompton-Shenandoah Co., Waynesboro, Va., has just completed an addition, costing approximately $79,000, which will give employment to 100 or 200 additional operatives.

Cotton Financial Notes

Eatonton (Ga.) Cotton Mills, closed for 10 years, are being renovated and will be occupied by a new concern, probably a silk mill.

Consolidated Textile Corp. has approved an offer of $105,000 cash for its Union Cotton Mill, Lafayette, Ga., made by Exposition Cotton Mills, Atlanta, subject to taxes and first mortgage bonds. Plant has been closed for two years.

L. A. Parker, Henderson, Ky., and associates have concluded arrangements for purchase of local mill of Consolidated Textile Corp., closed since 1931, for a stated consideration of $125,000.

Nelson Cotton Mill Co., Lenoir, N. C., has taken over mill of Whitnel Cotton Mill Co., on adjoining site, recently acquired through exchange of capital stock, which has been idle almost continuously since 1931. New owner will place in operation as Mill No. 2, for production of carded yarns. Nelson mill will continue spinning combed yarns, and will be known as Mill No. 1.

Bedford Textiles Co., Lowell, Mass.—Property of this company, now in receivership, is being sold by George W. Brown, temporary receiver for company.

Old Colony Mfg. Co., Taunton, Mass., specializing in production of cotton yarns and fabrics, has been acquired by new interests, headed by Ernest N. Hood, formerly treasurer of Naumkeag Steam Cotton Co., Salem, Mass. Operations will be continued on same line of output, with mill developed to maximum capacity, giving employment to over 100 persons. Mr. Hood is treasurer of new organization; and Philip A. Moreland, president.

Nashua (N. H.) Mfg. Co., through Robert Amory, president, has mailed to stockholders a tentative plan of capital readjustment.

Ranlo Mfg. Co., Gastonia, N. C.—A controlling interest in this company has been purchased by R. S. Dickinson & Co., Charlotte, N. C., an investment company.

Entwistle Mfg. Co., Rockingham, N. C., has begun operations at former Roberdel Mill, East Rockingham, recently acquired for branch mill, to be known in future as unit No. 3. Plant has been reconditioned and equipment installed. John A. McFalls will be superintendent, engaging in like capacity at Mills Nos. 1 and 2.

Firestone Cotton Mills, Inc., West Gastonia, N. C., has provided flood lights on their tennis court so that the operatives of the mills might enjoy night tennis.

Pelham Mills, Greenville, S. C.—A bid of $28,500 has been made for this property by James E. Mitchell & Co., of Philadelphia.

Drayton Mills, Spartanburg, S. C., has filed petition for 77-B reorganization.

Hart Yarn Co., York, S. C., has moved to new quarters in the Nichols Bldg. on East Liberty St.

Colonial Coverlet Co., 74 Worth St., New York, N. Y., has leased former mill of Browning Hosiery Co., Twelfth St. and Central Ave., Chattanooga, Tenn., and will remodel and equip for production of bedspreads.

Waypoyset Mfg. Co., Pawtucket, R. I.—Benjamin C. Chace, Pawtucket, has been appointed permanent receiver for this company, in bond of $25,000.

Berkshire Fine Spinning Associates, Providence, R. I., operating mills in Massachusetts and Rhode Island, have formulated a recapitalization plan to wipe out a deficit of $3,370,412, to eliminate preferred stock dividends totaling $42 a share, and to enable the company to pay dividends according to the undistributed profit tax law.

Riverside & Dan River Cotton Mills, Danville, Va., paid the last of the deferred preferred dividends on May 1.

Mill News

Wool Mill News

Beacon Textile Mills, Beacon Falls, Conn., recently organized with capital of $250,000, to manufacture knit goods and woolen specialties, has begun erection of new one-story mill, estimated to cost about $55,000, for which general contract has been let to Smith Construction Co., 101 Water St., Derby, Conn. G. H. Kuss and C. M. P. Lund, 474 North Main St., Seymour, Conn., head the new company.

Hockanum Mills, M. T. Stevens & Sons Co., Rockville, Conn., have begun erection of new two-story addition, to be used as a dyehouse.

National Felt Co., Easthampton, Mass., has filed plans for a boiler plant and mill extension with equipment. D. D. Eames, 739 Boylston St., Boston, Mass., is the architect.

American Woolen Co., Lawrence, Mass., has begun work on alterations and improvements at local Ayer Mill, to include a room between the mill and wet finishing building, to provide additional mill facilities.

Wyandotte Mill, Rochester, N. H., has lately installed new dye kettles and laid a new floor in the dyehouse and finishing rooms.

Hampshire Worsted Mills, Inc., recently organized as a subsidiary of Onyx Knitting Mills, Philadelphia, Pa., have arranged for lease of portion of former mill of Amoskeag Co., Manchester, N. H., for worsted spinning.

Albany (N.Y.) Felt Co. has let general contract to Rust Engineering Co., Koppers Building, Pittsburgh, Pa., for three-story and basement addition to mill on North Broadway, 95x310 ft., to cost over $85,000, including equipment.

Chatham Mfg. Co., Elkin, N. C., has under construction an addition to the main building, 74x112 ft. Looms will be installed on the first floor, with spinning and carding on the second.

P. McGraw Wool Co., Pittsburgh, Pa., has plans for three-story and basement addition, to be equipped for expansion in spinning department.

Collins & Aikman Corp. has installed an H-W conditioner for setting twist at its Philadelphia plant, and another at its Bristol, R. I., plant.

Narragansett Woolen Mill, Inc., of Wakefield, R. I., including a three-story stone building and smaller buildings, has been sold to the Clinton Woolen Co., Clinton, Maine. The transaction involved $40,000.

Argonne Worsted Co., Woonsocket, R. I., is erecting a brick-steel-concrete power plant at cost of $40,000.

Midwest Woolen Mills Co., Sheboygan Falls, Wis., have been overhauled and are running on white snow-suiting. Woodward, Baldwin & Co. are sole selling agents. J. Fred Wittenberg is manager and Walter Egers, superintendent.

Ayres, Ltd., Lachute Mills, Que., have completed erection of a large addition. New carding, spinning and weaving equipment will be installed, including 12 new Crompton & Knowles blanket looms.

Wool Financial Notes

Wauregan-Quinnebaug Mills, Inc., Danielson, Conn., plans to lease the Quinnebaug Mills to Theodore Guerin, who owns the River Mills, Inc., Woonsocket, R. I. An option to purchase is included in the lease.

Boynton Wool Scouring Co., Chicago, Ill., has purchased mill building at 3601-11 Iron St., 130x337 ft., which it has occupied under lease for several years.

Huntinjburg (Ind.) Woolen Mills is being made ready for reopening on yarn, blankets and woolen cloth. Directors of the reorganized corporation are members of the firm of Woodward, Baldwin & Co., New York, and Ray and Vera Katterhenry of Huntingburg. Chas. H. May is resident manager.

Capital City Woolen Mills, Des Moines, Iowa, plan early rebuilding of portion of mill recently damaged by fire. Loss estimated close to $50,000, including equipment.

Peter Brook Woolen Mills, Leicester, Mass., have been incorporated with capital of $50,000, to operate a local mill. Company will take over former mill of River Woolens, Inc., as noted last month. Barry Z. Golden is president and Gerald M. Rhodes, treasurer.

Thayer Woolen Co., North Oxford, Mass., was damaged by fire which broke out in the carding room on the third floor of the Texas Mill of the company and four carding machines and some stock were destroyed.

Somersworth, (N. H.) Woolen Co., recently bought by J. Levi Meader of Gonic, N. H., and New York interests, contains 11 sets, 3,160 woolen spindles and 39 broad looms. Mr. Meader is president and general manager. J. H. Pickles formerly of Hillsdale, Mich., is in charge of dyeing; Chester Allen formerly of Hillsborough, weaving; Henry J. Plourde, carding and Horace W. Slocum, finishing.

Muncy (Pa.) Woolen Mills, idle for several years, have resumed operations. Peter T. Link is general manager. The business was recently purchased by S. L. Hoffman Co., New York.

Samoset Worsted Mills, Inc., Woonsocket, R. I., closed for several months, have sold machinery and equipment to William B. Dunn, Providence, R. I., textile machinery dealer.

Rayon & Silk Mill News

Celanese Corp. of America, Inc., Amcelle, Md., has contracted with the Potomac Edison Co., Hagerstown, Md., for installation of a 10,000-kw. turbo-generator unit in local power plant.

Albert J. Batson, Midland Park, N. J., has begun operations in branch mill at Charlotte, N. C., where large space recently was leased in Wade building for this purpose. About 104 looms have been installed.

Calvin Textile Corp., Paterson, N. J., has been formed to produce jacquard fabrics of all kinds, including drapery, and dress fabrics, tie goods and novelties. The plant is located at 420 Madison Avenue.

Malina Co., Inc., New York, has installed an H-W silk conditioner.

Burlington Mills, Co., Greensboro, N. C., recently announced the inauguration of an expansion program of which one phase is the construction of a rayon weaving plant in Bristol, Va., which will cost approximately $100,000. The new mill will be a two-story, 100x150 ft. brick-and-steel building, and will provide employment for 200 to 250 persons. A new office building in Greensboro will also be erected at a cost of $75,000

Carter Fabrics Corp., Greensboro, N. C., has installed two H-W conditioners for setting yarn twist.

American Enka Corp., Enka, N. C., has commissioned B. F. Sturtevant Co., Hyde Park, Mass., to design and install air-conditioning systems for its laboratory and several other rooms. It has also awarded $50,000 contract for construction of filter plant and spray pond at Enka, N. C., to Reed & Abee, Inc., Fairview Road, Asheville, N. C.

Industrial Rayon Corp., Cleveland, Ohio, is arranging early call for bids on general contract for new plant on large tract of land in Painesville Township, near Painesville, Ohio, acquired several months ago. Plant will include a group of buildings, with main mill units of one and multi-story type totaling about 300,000 sq. ft. of floor space, supplemented by chemical building and laboratory, pumping station, steam-electric power plant, office building and miscellaneous structures. Cost about $7,500,000, with equipment. Completion is scheduled in 1938. Wilbur Watson & Associates, 4614 Prospect Ave., Cleveland, are architects. L. J. Jordan is company engineer in charge.

Sullivan Silk Co., Dushore, Pa., has leased property at Canton, Pa., formerly occupied by the Portable Tool Co., and will remodel and equip for new branch mill. About 82 looms and auxiliary equipment will be installed. It is proposed to begin operations early in the summer.

Philip Lieberman, Inc., McAdoo, Pa., will soon install 100 looms on rayon in a portion of the Royal Mills, previously owned by B. B. & R. Knight. West Warwick, R. I., town council have granted a 10-year tax exemption.

Viscose Co., Front Royal, Va., will begin construction on its 350x2,000 ft. unit about May 15. Details have been given in previous issues.

Virginia Rayon Mills, Orange, Va., plan the erection of a two-story brick addition, 70x120 ft., with E. E. Burruss, of Charlottesville, Va., as architect.

British American Silk Mills, Ltd., Granby, Que., have completed the erection of a large addition to their plant, including the installation of 50 more looms.

Rayon & Silk Financial Notes

Cheney Brothers, Manchester, Conn., have concluded arrangements for an RFC loan of $1,750,000 for financing and general operations, to be repaid in six years.

New Process Rayon, Inc., Gloucester City, N. J. — Edward G. Budd Mfg. Co., Philadelphia, Pa., has secured a controlling interest of 53.3% of the common stock of this company.

Arthur H. Hunter, former president of the Atlas Steel Co., Dunkirk, N. Y., and associates, are planning to establish a new industry for the manufacture of octonol, a high grade motor fuel used extensively by the airplane transport, and rayon, through a related process. A plant will be built in Dunkirk.

Susquehanna Silk Mills, New York, N. Y., has placed four of its idle mills on the market, located at Lock Haven, Jersey Shore, Milton and Lewistown, Pa., respectively. The company is maintaining active operations at its two mills at Sunbury, Pa., and mills at Huntingdon, Pa., Belvidere, N. J., and Elberton, Ga.

Gray, Gore & Daniels, Inc., Gastonia, N. C., recently organized with capital of $100,000, plan early operation of mill on silk and rayon yarns. New company is headed by G. D. Gray and W. A. Daniels, both of Gastonia, and J. S. Gore, LaGrange, Ga.

LaFrance Textile Industries, Philadelphia, Pa., has leased 5,000 sq. ft. floor space at 245-47 Spring St., N. W., Atlanta, Ga., from the James W. English Estate. The lease is effective immediately. Norman Spell represents the concern here.

Duplan Silk Corp., will be granted tax exemption for the proposed unit at Grottoes, Va. The plant there is expected to cost $550,000.

Knitting Mill News

Shugart Hosiery Mills, Inc., has been organized at Fort Payne, Ala., with W. Y. Shugart, for 12 years with the Davis Hosiery Mills, as president. Mill started business about May 1 in North Fort Payne and is manufacturing infant hosiery, employing 35 persons.

Clanssner Hosiery Co. has installed an H-W silk conditioner at its plant in Paducah, Ky., and also at its plant in Illmo, Mo.

Emple Knitting Mills, Bangor, Me., has installed new machinery to be used for shaker caps and sweaters.

Cleveland, Miss., is planning construction of a knitting mill, to be operated by Real Silk Hosiery Mills which has taken over operation of the municipally-constructed knitting mills at Durant.

Columbia (Miss.) Knitting Mills began construction of an addition to its plant which will approximately double present capacity. J. T. Hunnicut is superintendent of the mills.

Corinth (Miss.) Hosiery Mills has doubled capacity of plant through installation of 20 additional machines and now plans 28 more units and a dye and finishing plant in a new building.

Durant (Miss.) Mfg. Co., recently organized as an interest of Real Silk Hosiery Mills, Inc., Indianapolis, Ind., has begun erection of one-story hosiery mill, to be owned by city and occupied by company under long-term lease.

Grenada, Miss., has qualified under Mississippi's industrialization program whereby community is to issue $32,000 in bonds to finance construction of a hosiery mill. Election will be held soon to pass on proposed issue. This is the fourth certificate issued by the commission in the State, others being Cleveland, Amory and Durant. New enterprises will be tax free for 10 years.

Orenstein Bros. Knitting Mills, Brooklyn, N. Y., has installed four new knitting machines.

Sylvan Knitwear Mills, Brooklyn, N. Y., has added machinery to increase capacity for the fall season.

ADVERTISING PAGES REMOVED

Mill News

Waverly Sportswear Mills, Brooklyn, N. Y., is adding to its knitting equipment to increase production by 25%.

Standard Hosiery Mills, Alamance, N. C., is planning to build a modern hosiery finishing plant.

Foster Knitting Co., Burlington, N. C., has begun superstructure for one-story addition to mill, 28x100 ft., for which general contract was let recently to Bryan & Bayliff Co., Burlington. Cost over $40,000, with equipment.

Glen Raven Knitting Mills, Burlington, N. C., are installing two additional full-fashioned machines.

Hudson Silk Hosiery Co., Charlotte, N. C., is erecting an extension to the dyehouse at the unit of the company on North Brevard Street, and enlarging both of the plant's boilers. This work will cost about $25,000.

Lyerly Full-Fashioned Hosiery Mills, Hickory, N. C., is planning a 50x50 ft. addition largely for storage facilities.

R. L. James & Son, Marion, N. C., has begun the construction of two new buildings. One will measure 50x100 ft. for knitting and finishing division, and the other, 25x70 ft., will be the dyeing department, boiler room, etc.

Marion (N. C.) Knitting Mills have installed three Fidelity four-feed automatic ribbers and replaced 60 old model machines with automatic knitting machines.

Alamas Hosiery Co., Reidsville, N. C., is installing machinery to double its full-fashioned hosiery output.

Hanes Hoisery Mills, Winston-Salem, N. C., have awarded general contract to George W. Kane, Greensboro, N. C., for two-story brick addition, 105x205 ft. Cost over $75,000. Lockwood Greene Engineers, Inc., Spartanburg, S. C., are architects and engineers.

P. H. Hanes Knitting Co., Winston-Salem, N. C., has awarded contract for plant addition to C. M. Guest & Sons, Anderson, S. C. Plans are by J. E. Sirrine & Co., Greenville, S. C.

Jantzen Knitting Mills, Portland, Ore., have begun one-story addition, 60x95 ft., for which general contract was let to Robison, Scott & Scott, Inc., Portland.

Queen City Textile Corp., Allentown, Pa., has installed two Robert Reiner, 168-inch, tricot machines and four double tricot machines (simplex). In addition, the Reiner organization is installing a complete unit of finishing machines for making "angel skin" and glove fabrics.

Brownhill & Kramer, Inc., Philadelphia, Pa., have approved plans for one-story addition to new branch mill at Coudersport, Pa., where company recently acquired the former mill of the Dunlop Silk Co. New unit will be one-story, 40x118 ft. Equipment will be installed for seaming and looping operations. The firm operates 78 full-fashioned machines in Philadelphia and 22 in Coudersport.

Vanity Fair Silk Mills, Reading, Pa., are arranging for early installation of machinery in new branch mill at Monroeville, Ala., where superstructure is under way on one-story building, owned by Monroe Industries Corp.

Carl H. Weiss, Cleveland, Tenn., has leased a building on Central Ave., and will remodel and equip for a new hosiery mill. Machinery installation is estimated to cost close to $25,000. Children's hosiery and anklets will be made.

Englewood, Tenn.—A new hosiery mill is to be established here by the Englewood Citizens' Corp., incorporated by S. N. Land, E. W. Lee, H. D. Reynolds, W. M. Reynolds and others. The new company comes from Virginia. It has purchased buildings and will be in readiness to start up on Oct. 1.

Newport (Tenn.) Hosiery Mill, recently organized, has approved plans for construction of new one-story 40x300 ft. mill unit. Cost reported close to $35,000, with equipment.

Southern Silk Mills, Spring City, Tenn., has brought from Robert Reiner, Inc., six fast warp tricot machines of 168-inch width, and one Schlick beaming machine.

Southwest Virginia, Inc., Wytheville, Va., a municipal organization, Homer K. Bowen, executive secretary, reports negotiations with a manufacturer of full-fashioned hose (name temporarily withheld) for construction of local mill, to be occupied under long-term lease.

Fox River Valley Knitting Co., Appleton, Wis., has awarded general contract to C. R. Meyer & Sons Co., 50 State St., Oshkosh, Wis., for one-story addition.

Eagle Knitting Mills, Milwaukee, Wis., has rented additional space at 180 South Second St., for expansion.

Knitting Financial Notes

Albany (Ga.) Mfg. Co. will soon place its first full-fashioned machine in operation. Plant, started in December, is about one-half completed. A. Blum is in charge.

J. M. Hammerman Corp., Chicago, is reported to be planning a hosiery mill at Auburn, Ky.

Propper McCallum Hosiery Co., Inc., Northampton, Mass.—C. Edward Roe, Athol, Mass., has been appointed trustee for this company. The RFC granted a loan of $250,000 contingent on the sale of the firm's Philadelphia and Elmhurst, L. I., plants, which will be auctioned May 18 and 19 respectively.

Eagle Rock Hosiery Mills, Inc., West Orange, N. J., have been organized with capital of 2,500 shares, to operate a local knitting mill. New company is represented by John H. Mueller, 80 North Park St., East Orange, N. J.

Gibraltar Knitters, Inc., Brooklyn, N. Y., have formed with capital of 100 shares. New company is represented by Samuel M. Halpern, 16 Court St, Brooklyn, attorney

Radiant Knitting Mills, Inc., Brooklyn, N. Y., have been organized with capital of $10,000. New company is represented by William S. Jacknow, 26 Court St., Brooklyn, attorney.

Brown Durrell Co., New York, reports 23.3% gain in dollar volume of sales for first quarter of 1937, over first quarter 1936. The firm distributes Gordon hosiery and underwear.

Lake City Hosiery Mill, Marion, N. C., sold its machinery at auction recently to a company at Sumpter, S. C.

Excella Hosiery Mills, Inc., Stanfield, N. C., have been organized with capital of $100,000, to operate a local knitting mill. New company is headed by Brooks Jerome, treasurer, Stanfield (N. C.) Hosiery Mills, Inc., T. B. Love and L. R. Waggoner, both of Stanfield.

Claudia Knitting Mills have been organized in Philadelphia, Pa., with headquarters at 330 Market St., by Afron Aaronson, 1834 South 6th St., and associates.

Fashion Knitting Co., has been organized in Philadelphia, Pa., with headquarters at 250 West Cambria St., to manufacture knit goods, by Samuel Glass and associates.

Philadelphia (Pa.) Sweater Mills, Inc., have disposed of the power knitting machinery at their mill, and will concentrate on production of sportswear and beachwear in the higher-priced field.

Spuntex Knitting Mills, Philadelphia, Pa., have filed notice of organization to operate a local mill at Twenty-third and Walnut Sts. Harry L. Cooper, 246 West Upsal St., Philadelphia, heads the company.

Westmoreland Hosiery Mills, Philadelphia, Pa., have been organized as a subsidiary of Interstate Hosiery Mills, Inc., New York, N. Y., to operate local mills recently acquired by last noted company.

Redcay & Mell Knitting Co., Shillington, Pa., was sold to D. S. & W. Hosiery Co., Reading, Pa., at their private bid of $25,000, on April 17. Sale did not include the realty nor a group of 16 Hemphill "Banner" hosiery machines.

Earnings Statements

The following summarizes recent mill financial statements showing 1936 net earnings compared with 1935. Date indicates end of fiscal year; where none is given it is same as calendar year; minus signs mean loss instead of profit.

	1936	*Previous year*
Cotton Mills		
Consolidated Textile Corp. (5 weeks ended March 27,1937)	$43,300	.....
Mercury Mills, Ltd.	—21,357	.....
Montreal Cottons, Ltd.	405,407	.....
Knitting Mills		
Van Raalte Co.	835,414	$665,059
Van Raalte Co. (1st quarter, 1937)	258,868	223,350
Penman's, Ltd.	306,239	295,366
Zimmerknit Co.	131,015	100,900
Regent Knitting Mills	77,283	10,462
Rayon and Silk Mills		
Industrial Rayon Corp. (1st quarter, 1937)	468,003	198,616
Hartford Rayon Corp.	45,309	—12,889
Belding Heminway Co. (1st quarter, 1937)	191,156	174,713
Riverside Silk Mills (Toronto).	80,941	79,912
Wool Mills and others		
Stillwater Worsted Mills	545,964	516,432
Collins & Aikman (fiscal to Feb. 27)	4,991,659	3,974,688
S. Stroock & Co. (1st quarter, 1937)	85,358	73,164
Raybestos-Manhattan Co.	1,691,496	1,374,423

Processing Plant News

Lanett (Ala.) Bleachery & Dye Works have begun construction on a cloth warehouse which will cost about $65,000.

Davenport Process Co., Greenwich, Conn., recently organized by Herbert G. Davenport and Harry Davenport, Laconia, N. H., has leased local mill of the North Mianus Woolen Mills for a period of five years and will remodel for a new textile dyeing and finishing mill.

Palisade Piece Dye Works, Inc., North Bergen, N. J., have purchased mill property at Emporia, Va., and will remodel and equip at once for new branch plant.

Paragon Dye Works, Inc., Paterson, N. J. are planning to install 10 additional dyeing machines.

U. S. Novelty Printing Co., Inc., Paterson, N. J., recently organized, has started operations at their plant in 150 East 7th St. Chas. Nazzaro is president and general manager.

Dominion Silk Dyeing & Finishing Co., Ltd., Drummondville, Que., has installed the most modern equipment for screen printing and will shortly place same in full operation.

Processing Financial Notes

Western Franklin Process Co., Chicago, has sold its rayon converting equipment to **Caron Spinning Co.** and **Morgan Dyeing & Bleaching Co.,** Rochelle, Ill. and also transferred all related formulae and records to them. Hereafter Western Franklin Process Co. will operate as a package-dye cotton yarn plant exclusive and will provide more and better facilities along these lines.

Arnold Print Works, North Adams, Mass., has received court confirmation of the amended plan for reorganization under Section 77B. There will be no change in the corporation set-up. Unsecured creditors are to receive 100%— of which 85% is in form of notes.

Veterans Piece Dye & Finishing Co., Inc., Paterson, N. J., recently formed, has taken over the plant formerly occupied by O. K. Piece Dye Works. New company is headed by Jas. and Anthony Catania, John D. Lorenzo and Mario Nazarro, all of Paterson, N. J.

Victory Dyeing & Finishing Co., Paterson, N. J., has closed down its Mill B permanently, and will close Mill A, the largest of the two plants, within a short time, owing to lack of profit.

Avon Yarn Dyeing Corp., Brooklyn N. Y., has been organized with capital of $20,000, to operate a local dyeing and finishing mill. New company is represented by George Zinberg, 191 Joralemon St., Brooklyn, attorney.

Miscellaneous Mill News

W. H. Draper & Sons Inc., twines, Troy, N. Y., has sold its property at a foreclosure sale to the Rototiller Co., Inc., of Long Branch, N. J., for $7,500.

North Carolina State College, Raleigh, N. C. has received from the legislature an appropriation of $45,000 to enlarge the Textile School and $15,000 additional money for new equipment.

Standard Mill Supply Co., Providence, R. I. has purchased the Pawtucket plant of Everlastik, Inc.